

*copy it*

SEP 2 1931

# The Dental Digest

September 1931

PROPERTY OF  
DENTAL LIBRARY  
UNIVERSITY OF MICHIGAN  
DON'T UTILATE OR  
REMOVE

**Editor-**

**GEORGE WOOD CLAPP, D. D. S.**

***Publisher-*THE DENTISTS' SUPPLY COMPANY of New York**

# THE DENTAL DIGEST

VOLUME XXXVII

SEPTEMBER, 1931

NUMBER 9

## CONTENTS

CONTRIBUTED ARTICLES	PAGE
The Color Problem in Dentistry. E. BRUCE CLARK, D.D.S. . . . .	571
High Frequency—A Real Power. A. L. PARSONS, D.D.S. . . . .	583
Some Essentials in Full Denture Technic. F. M. HIGHT, D.D.S. . . . .	587
Pyorrhea, Both Preventable and Curable. SAMUEL CHARLES MILLER, D.D.S. . . . .	591
The Equitable Service Distribution Plan. ALFRED J. ASGIE, Sc.B., M.A., D.D.S., F.A.S.S. . . . .	595
Ethics. G. R. T. RICHARDS, D.D.S. . . . .	601
Some Questions Pertaining to Dental Jurisprudence. HERMAN IVANHOE	604
Dentistry Today. ARTHUR G. SMITH, D.M.D. . . . .	614
How Morton Davis Nearly Lost His Home. A. L. WALTERS, D.D.S. . . . .	617
New York Tuberculosis and Health Association . . . . .	621

### FEATURES

DIGESTS . . . . .	622
PRACTICAL HINTS . . . . .	628
DENTAL SECRETARIES AND ASSISTANTS . . . . .	632
BOOKS RECEIVED . . . . .	635
FUTURE EVENTS . . . . .	636

### THE DENTAL DIGEST

GEORGE WOOD CLAPP, D.D.S., EDITOR

ALLAN M. JOHNSON, A.B., D.M.D., ASSOCIATE EDITOR

Published monthly, by THE DENTISTS' SUPPLY COMPANY OF NEW YORK, 220 West 42nd Street, New York, U. S. A., to whom all communications relative to subscriptions, advertising, etc., should be addressed.

Subscription price, including postage, \$1.00 per year to all parts of the United States, Philippines, Guam, Cuba, Porto Rico, Mexico, and Hawaiian Islands.

To Canada, \$1.40. Great Britain and Continent, \$2.75. Australia, \$3.25. To all other Countries, \$1.75.

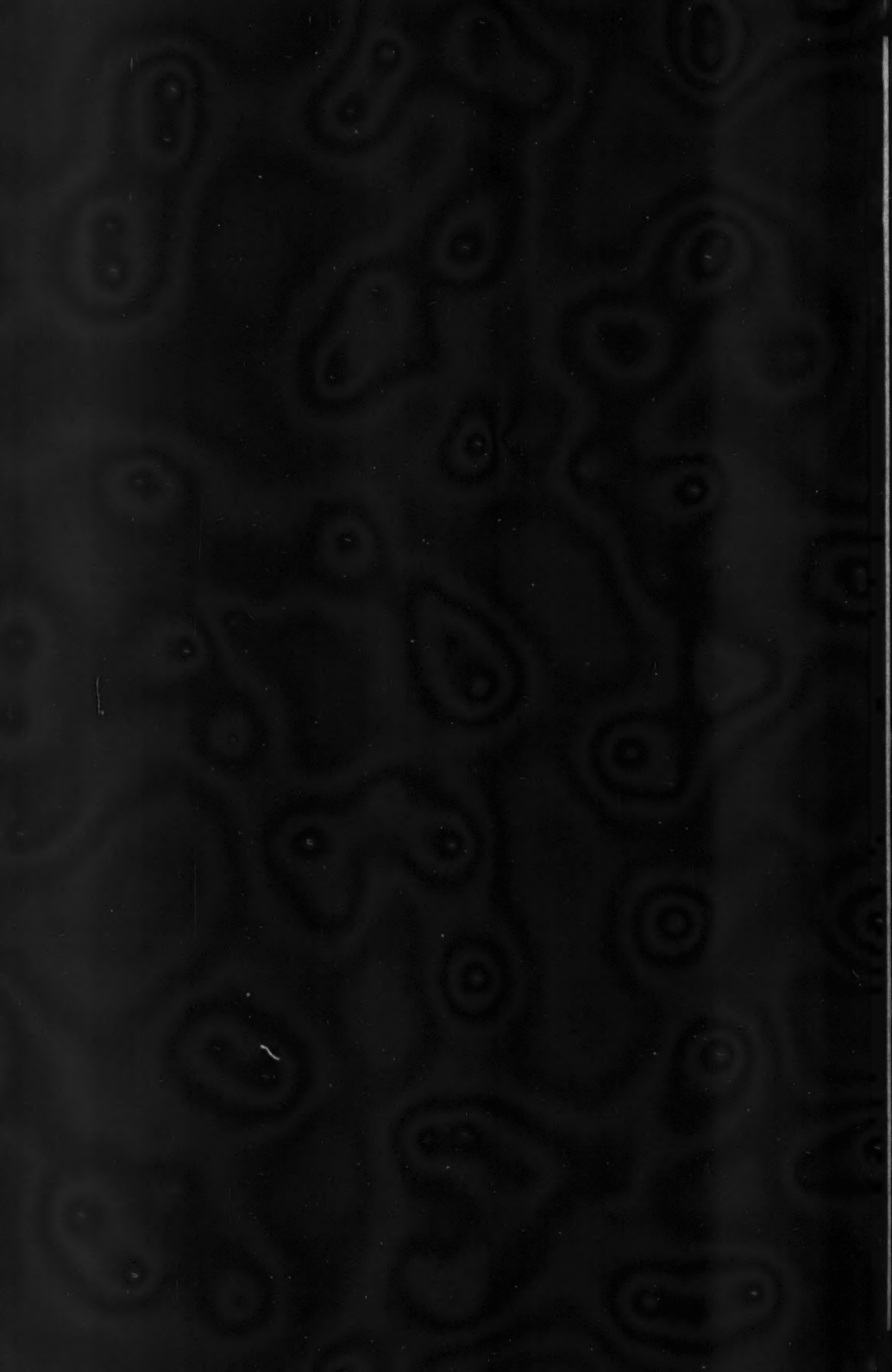
Articles intended for publication and correspondence regarding the same should be addressed EDITOR DENTAL DIGEST, Candler Bldg., Times Square, 220 West 42nd Street, New York, N. Y.

The editor and publishers are not responsible for the views of authors expressed in these pages.

Entered as Second Class Matter, at the Post-office at New York City, N. Y., January 29, 1909, under the Act of Congress, March 3, 1879.







# THE DENTAL DIGEST

VOLUME XXXVII

SEPTEMBER, 1931

NUMBER 9

## The Color Problem in Dentistry

By E. BRUCE CLARK, D.D.S., Uniontown, Pa.

### *Second Article*

#### A PRACTICAL APPLICATION OF THE PSYCHOLOGICAL PRIMARY COLORS

A great many people are of the opinion that there is only one set of primary colors, and this misunderstanding is responsible for a great deal of confusion in the general conception of the color science. There are, in fact, three distinctly different sets of primaries. One set of colors holds primacy in the mixture of pigments and another set in the mixture of colored light, but we shall leave these to be discussed in detail under the subject of color mixture in another article of this series. The third set or psychological primaries are those colors which are necessary and sufficient, in minimum number, for the description of all colors by visual analysis. They are red, yellow, green, blue, black and white.

When we look at a color, we can see other colors in it. All colors, in so far as we can see or analyze by vision, are made up of some combination of the psychological primary colors. It is very easy to recognize both red and yellow in orange, and it is just as easy to see blue and red in violet

or purple, but, on the other hand, it is impossible to see yellow and blue in green. We know that a mixture of blue and yellow pigments gives a green, but still we cannot see both blue and yellow in green at the same time, and it follows that green must necessarily be a psychological primary color. This same phenomenon is true of all other psychological primaries. For example, it is impossible to visualize yellow as being made up of red and green, in spite of the fact that a mixture of red and green light produces a pure yellow. But, if two slightly different yellows are compared, we can see red in one of them and green in the other, and this phenomenon is the first and most important use we make of the psychological primaries in dentistry, since there are several different hues of yellow found in the teeth. When matching a tooth we differentiate the yellow hue of the natural tooth and the yellow hue of the shade-guide tooth, provided they are different, by the fact that one is a redder yellow or

a greener yellow than the other. This degree of difference between the yellow hues of the teeth varies with the saturation of the hues, but before discussing this difference in detail let us return to the psychological primaries and determine just what we see in colors that makes them differ in brilliance and saturation.

It will be remembered that the psychological primaries include black and white. These two colors must necessarily be included, since all colors in nature contain varying amounts of both black and white. It is not difficult to see black in a dark color or white in a light color; furthermore, it is not difficult to appreciate the fact that the proportion of white to black in a color determines the brilliance of that color, so far as we can see. In other words, very brilliant colors contain more white in proportion to the black content, and vice versa.

Since colors contain both black and white, they must necessarily contain certain amounts of gray, for a mixture of black and white produces gray regardless of how the mixture is made or where it is seen. Now, for the moment, let us forget about the brilliance of color, disregarding the fact that the black or white may predominate, and consider this black and white content simply as a gray. As we look at the gingival-third color of a central incisor without comparing it to any other color, we can see two color constituents in it, namely, yellow and gray. The middle-third color also of the same tooth will display yellow and gray, but the gray appears to be growing stronger and the yellow weaker. In the incisal third of the

same tooth we may see that the yellow has almost disappeared if the tooth is quite thin, and that the gray is dominant. Now, the difference between the yellow seen in the gingival third and the yellow of the incisal third is a saturation difference, the gingival third being more saturated.

The factor determining the saturation of a color, so far as the eye can see, is the relative amount of hue (yellow in the case above) in proportion to the amount of gray in the same color, and the saturation increases as the amount of gray decreases. The dimension of saturation plays such an important part in the tooth color that an effort should be made to understand it thoroughly. The manufacturers of filling materials would apparently have us believe that there are only three degrees of saturation in the teeth, as most products provide for this dimension of color with the usual yellow, yellow-gray and gray, when, in fact, there are at least eighteen easily perceptible steps of saturation in the teeth for each of three hues of medium brilliance.

We have now accounted for the fact that color can be seen in three dimensions, and we have learned how the psychological primary colors combine or can be seen combined to make the various dimensions of color. In tooth color we are interested particularly in the red, yellow and green hues, since the teeth present yellow hues, and these yellows can be distinguished from each other only by a trace of red and green that can be seen in them. We have seen that brilliance is the result of the relative proportion of black to white, and that saturation is the result of the



relative proportion of the hue content to the amount of black and white taken together (gray). We are now fully prepared to make a visual study of the colors seen in the natural teeth, together with their distribution throughout the crown of a single tooth and throughout the full denture.

#### A VISUAL INSPECTION OF TOOTH COLOR

A great many dental operations require the restoration of tooth color as well as tooth structure. Materials imitating tooth color are manufactured and used for this purpose. However, it is seldom that one of these materials will meet the color requirements of a case without its being modified by an admixture of one or more additional colors. It is quite unfortunate that such a condition as this exists, for it requires a great deal of skill on the part of the dentist to select two or more colors that will, when mixed together, produce the color the case demands. The time required and the nature of the material used preclude the making of very many trial mixes, such as the artist makes on his palette in a few seconds, and this situation demands further that the dentist be even more skilled than would be necessary if he were using paints instead of porcelain and cement. Manufacturers are beginning to realize that these conditions should not exist, and it is safe to predict that the "art" will be gradually eliminated and color mixture made an exact science in its application to dentistry.

The materialization of a standardized system of color mixture for the

various materials used in restorative dentistry will not eliminate all of the difficulty we now experience. The dentist will still be required to recognize the color as it appears in a tooth and match or measure it by some system of specification that demands a visual inspection of the colors. Matching solid colors in fabrics or samples of paint, etc., is not a difficult matter because we are then dealing with only one color, but the matching of natural teeth presents an entirely different problem, since the color varies throughout the crown of the tooth and throughout the natural denture just the same as it varies in the mouths of different individuals. When we know just what these differences are, and when and where to expect them, the problem becomes more simplified. Being familiar with the three dimensions of color and the psychological primary colors, we are now equipped to study the distribution of color as it is seen in the teeth and to train ourselves to recognize and differentiate the minute quality variations which these colors exhibit.

In the study of the colors that can be seen in the natural teeth we shall classify the teeth into three groups, namely, light, medium-brilliant and dark teeth. It is necessary to make this classification because the average hue presented by each group is different. We shall further classify the surface of the crown of a tooth into the gingival third, the middle third and the incisal third, and we shall speak of the colors presented by these surfaces as the gingival color, the middle color and the incisal color respectively. This latter classification is also necessary

because the different surfaces of the same tooth present saturation and brilliance differences as well as hue differences.

The dominant hue of tooth color may be said to be yellow, since its strongest saturations lie in the yellow of the spectrum and are included in the first five steps in the yellow section of the Munsell hue scale (Fig. 2).<sup>\*</sup> As the saturation decreases, the hue limits increase, and this increase extends well into the yellow-red (orange) in one direction and includes almost the entire yellow section of the hue scale in the other direction before the hue becomes imperceptible. However, these yellow-reds and greenish-yellows occur only in the incisal-third areas and in such weak degrees of saturation that they contribute very little to the dominant hue of the teeth; but, since they exist, they must be included in tooth color. For example, if each hue of tooth color were to be arranged into its various degrees of brilliance and saturation, it would require at least ten hue charts similar to those illustrated in Fig. 4 to cover the entire field of tooth color, provided each chart displayed only one hue throughout.

Fortunately, tooth color can be represented by three charts, since <sup>hue</sup>none of the three groups (light, medium and dark teeth) exhibits hue differences, within the group itself, of such a wide range as mentioned above. Each group presents also a slightly different average hue, and, furthermore, the perceptibility of the hue decreases with a decrease in saturation. These three

factors make possible the classification of tooth color into three hue charts instead of ten (Fig. 4). The reduction in number is accomplished by varying the hue in each chart as the steps vary in brilliance; that is, the hue grows slightly redder as the steps grow darker (left to right), in the same manner that the hue changes occur in the natural teeth as they become darker. These three hue charts are constructed of dental porcelain and arranged in equal steps of brilliance (left to right) and equal steps of saturation (top to bottom), the bottom row exhibiting zero saturation (neutral grays) and the top row the strongest degree of saturation necessary.

It may be of interest to state that the development of the pigments used in the construction of these charts in high-fusing porcelain required sixteen years of constant research, which was carried on in the ceramic laboratory of an American tooth manufacturer. This research was started at the suggestion of George Wood Clapp, D.D.S., who in his early investigation of tooth color observed and specified many of the color deficiencies of the high-fusing materials. The construction of the system of tooth-color arrangement given above was begun about eight years later and at that time it was still quite impossible to reproduce many of the natural tooth colors in high-fusing porcelain, so that it was necessary to use low-fusing materials, stains and china paints. The above-mentioned research into the chemistry of pigments has made it possible, within the last year, to reconstruct all of the above-charted tooth-color specifications in high-fusing

<sup>\*</sup> See THE DENTAL DIGEST, August, 1931.

win the  
given chart

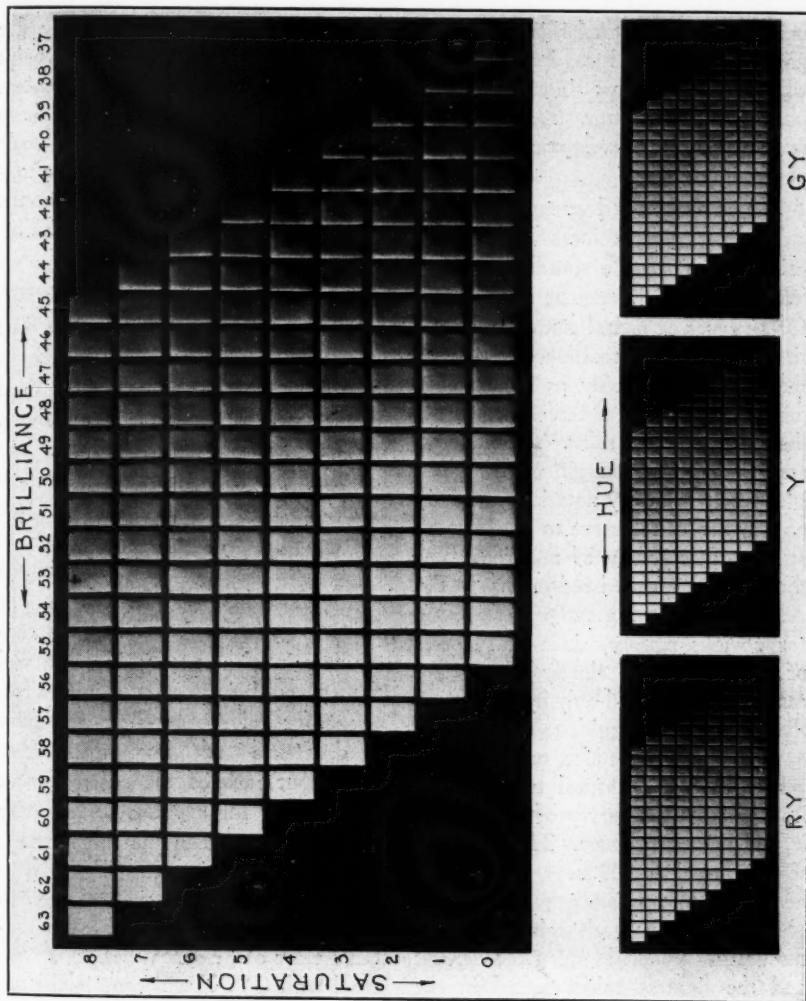


Fig. 4

An arrangement of the entire field of tooth color into equal steps of hue, brilliance and saturation, constructed in high-fusing dental porcelain. The small charts represent the three hues of tooth color, namely, reddish-yellow (RY), yellow (Y) and greenish-yellow (GY). The upper chart is an enlargement of any one of the lower charts and is provided with a notation for the brilliance and saturation arrangement.

material. A report of this research is now being compiled and its publication will reveal a most interesting and phenomenal departure from the past methods of color development in dental porcelain.

The above-charted system of tooth-color arrangement was constructed primarily to furnish standards for research in the development of pigments for all types of dental restorative materials that imitate tooth color, but we shall use it here only as a means of providing a simple reference table for the study of tooth color. The notation appearing in the margin of the chart is a purely arbitrary notation, and it in no way makes reference to the Munsell or any other system of notation. The three hues are called red-yellow (RY), yellow (Y) and green-yellow (GY) for obvious reasons, since the yellows of tooth color are closely related and can be differentiated only by comparing them with a shade-guide tooth that may appear to be a redder or a greener yellow than the natural tooth, as we learned from the survey of the psychological primaries above. The brilliance scale is based on 100 steps, but 50 does not refer to median gray; instead it specifies median tooth color, which is the half-way point between the darkest and the lightest colors found in the teeth. Each vertical row presents a true saturation scale of equal steps, but these steps grow slightly wider in perceptibility as the rows decrease in brilliance; in other words, the saturation steps are greater between the darker shades than they are between the lighter tints. This deviation from the usual saturation plan made it possible to con-

struct all of the colors from only five basic colors, and from a practical point of view the notation is more convenient than if a standard notation had been used. Note that the brilliance scale extends from 63 to 37 and the saturation scale from zero to 8, and that the hues are marked by RY, Y and GY.

### HUE

We have mentioned that the hue varies in the teeth with the brilliance, but this condition cannot be recognized by the unaided eye, and, furthermore, the classification of tooth color into red-yellow, yellow and green-yellow eliminates this feature, so that a dark tooth does not appear more often in the red-yellow hue than it does in the green-yellow hue. Unfortunately, the delicate gradations of the charts cannot be printed accurately in color, and if they could, it would be impossible, except for color experts, to recognize a difference of hue distribution throughout each of the charts, but it is quite easy for any one to recognize the hue difference in the three charts. For example, if the hue RY is compared to that of Y, it will be seen to contain a trace of red and Y to contain a trace of green. When Y is compared with GY, Y will contain the red and GY the green, following the law of the psychological primary colors. Hue differences are recognized in the natural teeth in the same manner when a shade guide tooth is used for comparison. Hue differences are more easily recognized in the gingival colors, in spite of the fact that they are not so great. However, the hues are more



saturated and therefore stronger and more easily seen.

The hue distribution throughout the crown of a tooth does not follow any specific rule, since it is not uncommon to find an RY incisal color in combination with a GY gingival color; the middle or blend color in these cases is, of course, Y. The distribution of hue throughout the entire denture is fairly constant in the respective areas, even in the darker and more saturated cuspids. Occasionally the gingival-third colors of the incisors of young people will appear slightly redder than in the cuspids. The gingival colors in young people usually exhibit a redder hue than in middle age, and of course the teeth are very light, giving the hue a pink cast when it is compared to a yellow shade-guide tooth. The sensation of greenish-yellow seen in the teeth of patients having a very red complexion is often mistaken for a true tooth color when, in fact, the sensation of green is due only to contrast with the red complexion. The hue of a tooth should never be estimated without some standard or shade-guide tooth for comparison, since environmental influences will defeat even the most experienced in the specification of a color. This factor will be considered in detail later.

#### BRILLIANCE

If hue were the only dimension of color exhibited by the teeth, there would be no need for such an article as this, for it plays a minor part in the color of the teeth when compared to the dimensions of brilliance and saturation. Probably the greatest number of mistakes made in taking the

shade for ceramic restorations have been made by confusing weak saturations with light colors. The shading in most illustrations of artificial teeth gives the impression that the incisal color is lighter than the gingival color. The fact that natural enamel is lighter than dentin, when it is placed over dentin, tends to make the student believe that the incisal color of natural teeth is lighter than other areas of the tooth, but this conception is wrong in almost every instance. Natural enamel may be lighter than dentin, but it is more translucent and therefore its brilliance is influenced by its background. The incisal color is darker than the gingival color because it has a very dark background, that of the oral cavity. Hold a mouth-mirror behind a central and note the color change in the incisal third compared to that of the gingival third. The very dark bluish-gray spots seen in the incisal-third areas are simply transparent areas, and they appear very dark because the interior of the mouth is dark, regardless of the small amount of light that may enter it. A window-pane appears white from inside the room in daylight but very black at night when the room is illuminated, even though an outside arc light may be seen through the window.

The brilliance of the incisal edge of a tooth, as compared to the gingival color, decreases in direct ratio to the decrease in saturation. The relation of brilliance to saturation in the chart (Fig. 4) is based on the average relation as it was found in 6,000 natural teeth, and for that reason it can be considered a very accurate estimate of

the exact relationship between the two dimensions. It may be illustrated by the following example:

Almost all of the gingival colors appear in the three upper saturation rows, 6, 7 and 8. Let us select, for example, the one in the eighth row having a brilliance of 53. Lay a straight-edge on the chart bisecting color 53-8 and parallel to the uneven margins of the chart so that the other end of the straight-edge will bisect color 45-0. A line has now been established on which the average relation between brilliance and saturation may be determined. If the incisal saturation of the tooth in question is 5, the brilliance will be darker than 53, or 50; if it is 3, the brilliance will be 48, and if it is zero in saturation, the brilliance will be as dark as 45, according to the average of 6,000 calibrated natural teeth. The writer frankly admits that he measured and calibrated the color of several hundred teeth before being convinced that this condition really exists. If these facts are surprising to any reader, it is reasonable to assume that he also has mistaken weak saturation for brilliance. In other words, gray colors have appeared lighter to us than they actually are, because they lack hue or saturation.

The first thing an art student is taught is to distinguish between what he calls the "value" or brilliance of colors exhibiting different hues and also between gray colors and those exhibiting hue. He is taught to half close or shade the eyes and estimate which of two colors reflects the more light or which seems the brighter or whiter. It is not difficult to determine which of

two saturated colors is the lighter or darker, but when one of the colors is neutral gray, the task becomes more complicated. If you are doubtful of your ability to recognize these brilliance or "value" differences, ask an artist acquaintance to give you a practical demonstration. Artists can distinguish these differences with surprising accuracy.

The gradation of brilliance in the crown of a tooth follows a definite plan, even in incisors which present dark areas of translucency in the incisal third. These areas, when considered alone, are very much darker than the surrounding tooth structure, but, when considered only as a contributing factor to the total brilliance of the area, they do not alter the above-established relation of brilliance to saturation. To determine this total brilliance, the observer should stand far enough away from the patient, when taking the shade, so that the eye is unable to see the outline of these translucent areas, thus making the incisal third of the tooth appear to present a solid color.

The distribution of brilliance throughout the entire denture follows a more or less definite plan. The gingival colors of the incisors are the lightest area, the cuspids are from one to two steps darker, and the bicuspid and molars usually present the average brilliance of cuspid and central areas when they are free from alloy fillings. The incisal- and occlusal-third areas vary in brilliance according to the saturation of the individual tooth. However, the saturation is fairly constant for incisors as a group in the same denture, for the cuspids, and for

the bicuspid and molars as a group. The cuspids always present a more saturated incisal third than the centrals and are therefore usually equal to them or lighter in brilliance, since the cuspid gingival color is darker than that of the incisors. The brilliance specifications of a typical denture may be traced out on the chart from the following notations, in which the gingival brilliance appears above the incisal brilliance: centrals and laterals,  $\frac{56}{50}$ ; cus-

pids,  $\frac{54}{52}$ ; bicuspid,  $\frac{55}{51}$ ; molars,  $\frac{55}{51}$ .

The saturation differences will later appear together with this brilliance distribution, thus giving all the variations of color a definite location on the chart.

The brilliance of the colors in the teeth of different individuals varies with the age and habits of the individual. However, it is not uncommon to find an older person whose complexion has naturally darkened with age, but whose teeth have remained very light. The dark complexion accentuates the lightness of the teeth, and the light teeth make the complexion more noticeable. This condition should be avoided in the selection of artificial teeth for full dentures, since a lack of brilliance harmony is more displeasing than an unbalanced hue harmony.

#### SATURATION

The distribution of saturation throughout the crown of a tooth is responsible for the apparent color of the tooth to a greater degree than either of the other two dimensions. It is not unusual to see a central or lateral with

a gingival saturation lying in Row 8 and the incisal saturation lying in Row 1. These cases present large areas of translucent neutral gray in their incisal thirds. The blend color seen in the middle third of these teeth is usually of mean saturation and brilliance. In other words, the color of the tooth gradually gradates from a strong yellow in the gingival area to a neutral gray in the incisal area. (Just why these neutral areas have a bluish appearance will be discussed in a subsequent article on *Color Vision*).

The conditions above are seen in anterior teeth that have very thin incisal edges, due either to the natural characteristics of the tooth or to abrasion from a deep overbite. The natural abrasion appearing with advancing age eliminates the thin incisal areas, and the color of the area gradually becomes more saturated, as it would if the incisal edges were deliberately ground away. The recent development of neutral-gray pigments will dispense with the necessity of reproducing these translucent areas by the use of stain, which in itself has no translucency and is therefore only a painted imitation of the natural condition seen in the tooth.

The saturation produced by the combination of these bluish-gray areas with the surrounding color lies in Row 1 or 2 on the chart, while the gray itself is zero. The hue of these low saturations is rather difficult to distinguish. It is usually yellow in young people, but grows redder with advancing age and of course becomes more apparent as the saturation increases.

The cuspids seldom present incisal

edges of lower saturation than 3 and are usually 4 or 5, even when the gingival color is 6 or 7. Cuspids sometimes appear to be of a solid color, but upon close examination the incisal color will be found to be from one to two steps weaker in saturation.

Laterals differ slightly from centrals in saturation according to their size and position in the arch. Laterals are often positioned slightly lingually to normal alignment, and in these cases the saturation is weaker. A very large lateral will scarcely vary in saturation from the central when it is in normal alignment, while a small lateral may be as much as one step weaker. The saturation of the incisal edges of laterals is often slightly stronger than in the centrals because the translucent areas in them are not so widely distributed, usually being confined to a narrow band appearing just above the incisal edge.

The bicuspid are very similar to the laterals in color distribution, except that the incisal thirds appear as a solid color and are usually one step stronger in saturation. The gingival areas of the bicuspid and molars present the same saturation as seen in the laterals, but their position in the mouth throws them into shadow, which reduces the colors in saturation and brilliance as well. This feature should be disregarded when taking the shade, since the restoration will be positioned in the same manner.

The saturation and brilliance distribution in a typical natural denture may be specified as follows: centrals,

$\frac{56-7}{50-3}$ ; laterals,  $\frac{56-6\frac{1}{2}}{52-5}$ ; cuspids,  $\frac{54-7}{52-5}$ ; bicuspid,  $\frac{55-6\frac{1}{2}}{51-4}$ ; molars,  $\frac{55-6\frac{1}{2}}{51-4\frac{1}{2}}$ .

Saturation differences are not difficult to distinguish, provided we can recognize brilliance differences in colors of different hues and saturations. If we were to compare Colors 56-6 and 56-5 of the same hue, it would not be difficult to see that 56-6 contained more hue and was therefore more saturated, because they are of the same brilliance; but if we did not know that the two colors were equal in brilliance, we might confuse the weakness of saturation for brilliance and say that 56-5 was lighter because it contained less hue. Slight mistakes of this nature occur every time we take the shade of a tooth, unless we are able to recognize brilliance differences in colors of different hue and saturation. How often do our silicate fillings appear too light in comparison to the times that they appear too gray? When they appear too light, we have mistaken the weak saturation (grayness) of the tooth for brilliance and have used a material that is too light and too saturated.

#### SHADE GUIDES

The commercial shade guide is necessarily limited to so few variations in color that they are practically useless in ceramic dentistry, and consequently most operators have made systems or shade guides for their own use. When these shade guides follow the plan illustrated in the chart (Fig. 4), they function most successfully, and it is not necessary to construct each unit,



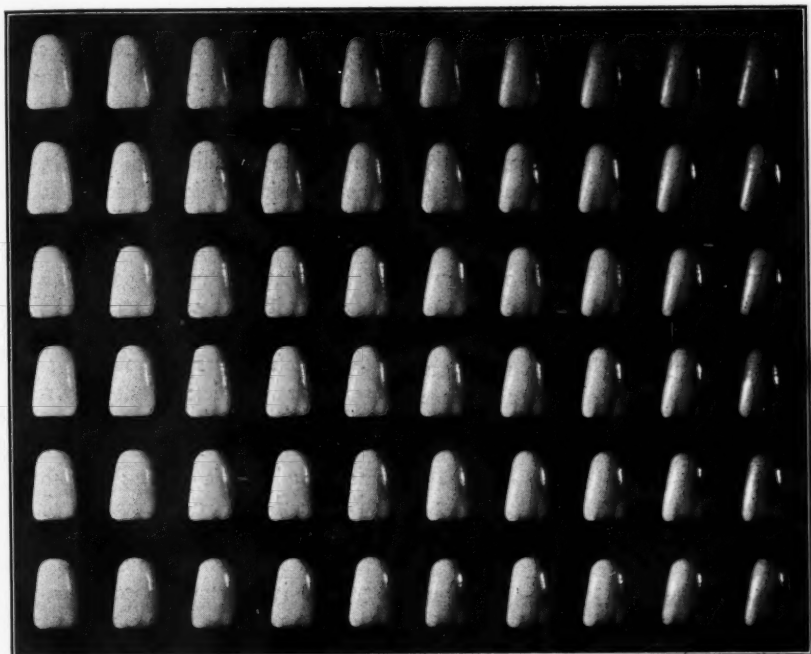


Fig. 5

A shade guide containing 60 teeth arranged in such a manner that it furnishes the specifications for 342 gingival-third colors and 342 incisal-third colors.

provided the hues have been balanced in brilliance and saturation.

Fig. 5 illustrates the writer's shade guide constructed from the chart arrangement. All the colors on the shade guide are of the same hue, yellow, for it is an easy matter to recognize a difference in hue when a redder or a greener yellow is found in the natural teeth, and for that reason shade-guide teeth that match the red-yellow and green-yellow hues are not required. The shade guide exhibits only every other brilliance step, for it is not difficult to see that if one unit is too light and the next is too dark, the intermediate or missing unit should be used.

The saturation steps are all included, since they are wider steps than the brilliance steps. Saturation Rows 8, 7, 6, 5, 4 and 3 were used for the gingival colors and Rows 0, 1, 2, 3, 4 and 5 for the incisal colors. The arrangement necessitates only 60 units in the shade guide, but provides for the selection and use of 342 gingival colors and 342 incisal colors.

Some dentists make a serious mistake in the form used for the construction of their shade guides. The units should always be made in the form of a tooth so that the contours of the guide teeth and the natural teeth are the same. The shade-guide teeth should be as

thick as the natural teeth. If instead they are designed to imitate the thickness of the labial wall of a jacket crown, they are practically useless. Still this type is often used and its design has been based upon the fact that the saturation of porcelain increases with the thickness of the material, which is quite true. However, a very important feature has been overlooked, which we will illustrate by the following:

Add two or three drops of mercuriochrome to a dram of water and place a drop of this solution on a thin piece of glass, such as a bacteriological slide, spreading it out to make a thin film. Stand with your back to your operating window and hold the glass slide in front of you, viewing it in the same light as you would a jacket crown in a patient's mouth. Hold a piece of white or yellow paper behind the slide and note the color change; it is now three or four steps more saturated than when seen without a background. The same phenomenon becomes evident, to a lesser degree, when we cement a jacket crown in position with oxyphosphate cement. The saturation is increased and the color becomes very much stronger. Now, if the shade is

taken with a thin piece of porcelain and a crown constructed of the same material, the crown will not match when it is cemented to place unless a very gray cement is used, and in this case the crown will match only in the same intensity of light incident at the time the crown was set. In more intense light the crown will be grayer than the natural tooth, and in less intense light it will be stronger and more saturated than the tooth it is supposed to match. This very discouraging feature of the work is eliminated by using a tooth of normal thickness for your shade-guide unit. The natural tooth is matched with this shade-guide tooth, and when the crown is constructed, the gingival color will be a step or two weaker in saturation because it is thin, but when it is cemented to place, the cement restores the lost saturation, and the crown matches the shade-guide tooth. Minute mistakes may be corrected by the choice of cement used, but mistakes such as described above can never be successfully corrected. The physical explanation of this phenomenon will be described in a later article on *Light and Color Production*.

(To be continued)



## High Frequency—A Real Power

### EVERY LITTLE WAVE-LENGTH HAS ITS USE

By A. L. PARSONS, D.D.S., Cleveland, Ohio

I wonder how many individuals, after having a good big meal, ever stop to realize that everything they have been eating is filled with energy, energy which has previously been absorbed from the sun's rays. Plant and animal life could not exist without this energy.

For many years scientists have been delving into the various sun's rays or waves to determine the best uses to which their energy might be applied. Every wave-length, both visible and invisible, has some definite use, although a few have not as yet been thoroughly worked out. The others are all working in their allotted places.

In the past there has been a great confusion in the literature on the subject of physiotherapy, so that the beginner has been confronted with many difficulties. It has been impossible for him to know where or how to commence. He has been obliged to flop and flounder around the middle and paddle both ways in an endeavor to get somewhere, eventually sticking the appliance in the corner and condemning it as a worthless fake, while the trouble is really in his own lack of knowledge and his consequent inability to work out his problem.

Dental physiotherapy is only twelve or fifteen years old at the most; some branches are even much younger. Diathermy is the infant and is only beginning to raise its head from the

pillow, but it is destined to become a very powerful factor in a few years. There is no published technic to guide the beginner in his difficulties.

#### KNOW YOUR WAVE-LENGTHS

It is just as essential for a physiotherapist to have a thorough knowledge of the wave-length he is using as it is for a physician to have a thorough knowledge of his drugs. A wave-length improperly used might be just as dangerous as an improperly used drug.

Physiotherapy is a science in itself, and it is policy to be equipped with the best appliance obtainable. Cheap appliances will get you nowhere and will only cause failure.

It is deplorable that so many who are unfamiliar with the subject are so hasty in condemning ultra-violet and the associated wave-lengths as dangerous and worthless. Perhaps a cheap outfit and lack of knowledge have led to failure. It is impossible to pass an intelligent opinion upon an unintelligent foundation. An intelligent opinion cannot be passed without the proper knowledge to back up that opinion.

I know of an instance where ultra-violet was censured and belittled because the operator did not have the ability to conquer his problem—and all on only one year of experience. Very

little can be learned in one year, as the beginner will not have had time to recover from his bewilderment; consequently his opinion may be very unscientific. Strychnin, arsenic, bichlorid of mercury and many other drugs are very dangerous, if improperly used, and sugar-coated bread pills are worthless, except to the hungry man.

None of the wave-lengths are dangerous, if applied in the proper way and place, and they are all very effective. For example, it would not be safe to apply diathermy to a sinus infection or a carbuncle without first obtaining drainage or to apply ultra-violet to a diabetic. Neither would ultra-violet conquer a carbuncle as the rays would not penetrate into the mass of pus. It might destroy some of the bacteria, but not enough to be effective. There are many pitfalls and dangers to confront the beginner, and the neglect of little minor details may mark the dividing line between success and failure.

#### TREATING A CARBUNCLE

Now I shall endeavor to show how the treatment of a carbuncle can be very successful, even beyond all expectations, and in doing so I shall cite a recent case.

On March 3rd last a patient entered the hospital for the treatment of a very large carbuncle on the back of the neck at the base of the skull. There was a great deal of pain at this time. The carbuncle measured about 3x4 inches.

The operation was performed on March 5th, a very large and generous crater being made for drainage. A great amount of pus was drained off

and the crater packed with gauze. For days the pus continued to drain off, but unfortunately, not enough. Two other heads began to develop above and on either side of the crater.

By Sunday, March 15th, the patient was becoming delirious. The pain was excruciating and almost unbearable, yet the infection progressed. A coma was expected and the attendants and the physician were all greatly alarmed at the inevitable outcome.

The top of the carbuncle was a mass of pustules ranging in size from the head of a pin to a navy bean and larger, and as numerous as the holes in a sponge—not a very encouraging condition to develop two weeks after the operation. A consultation was held on the morning of the 15th, and, although uninvited, the writer was there.

The writer suggested placing a false fever at the base of the carbuncle and driving out the pus, as fever is nature's defense against infection. The physicians, being unfamiliar with wave-lengths, were at a loss to know how such a thing could be done.

As they had no knowledge of high frequency, it became necessary to sell them the idea. Being open-minded, they felt that probably it might do some good and at least could do no harm. So at four o'clock in the afternoon, after getting my own equipment, one electrode was made to fit the chest and abdomen and another was fitted as a cap over the carbuncle, a piece being cut away to expose the crater. The wires were then attached and the current turned on and allowed to pass through the body from the larger electrode to the smaller.



As the waves pass from one end of the larger electrode to the opposite end of the smaller, the greatest heat is developed at the point of intersection. This intersection was planned about  $1\frac{1}{2}$  inches back of the base of the carbuncle.

Bones, fat, pus and congestion cause resistance to the passage of the waves, and resistance creates heat. Consequently heat was generated around the base of the carbuncle and combined with the heat at the point of intersection, and a dense wall of artificial fever was placed as a bulwark around the base of the infection.

#### AN ASTOUNDING SIGHT

After twenty minutes the patient felt that the pain was subsiding. The treatment lasted forty minutes.

When the electrodes were removed, a most astounding sight confronted us. Every pustule and the crater were wringing pus out of the mass, and it was running down the neck onto the pad placed on the pillow to catch it while the nurse was cleaning up the surface.

The first treatment removed half of the pain, and the patient felt greatly relieved. The eyes had recovered some of the old familiar expression, the voice was different and the haggard expression had left the face.

The pus came as freely as if wrung from a sponge. We all knew then that the patient had been halted on the downward path and was facing about, traveling away from the long river which has no ending. The nurse was astonished at the results, never having heard of high frequency in the treatment of carbuncles.

Four hours later—at eight o'clock—a second treatment was given. The heat developed from high frequency will last for about four hours in the bone tissues. As the infection was close to the vertebra, the heat was probably held for the full allotted time.

Forty minutes was allowed for the second treatment, which brought a fresh exudation of pus, but not so much this time as the first. This treatment removed the balance of the pain and from that time on there was no recurrence. Only the ache occasioned by the crater remained. That night was the first since entering the hospital that the patient had slept without opiates.

#### PHYSICIAN DELIGHTED

On Monday morning another treatment was given by appointment. The patient's physician viewed his first case under high frequency and was delighted with the results. There was a considerable diminution of pus, although it was flowing freely.

Applications were given again at twelve and four, with the same satisfactory results. After the last treatment the carbuncle had become soft and mushy and the former pain from pressure had been greatly reduced. The patient had a wonderful sleep on Monday night. Treatments were continued twice daily for the balance of the week, and the patient left the hospital on the following Sunday.

A generous quantity of new granulation appeared in the bottom of the crater by Wednesday night, showing that the pus sac was becoming well evacuated. Only a comparatively

small amount of pus was flowing on the Sunday when the patient went home, and he was feeling fine. Treatments continued at home, and infra-red was added twice daily to help draw and dry up the surface.

By the end of the second week no more pus was flowing and the crater was rapidly filling with granulation tissue. Only a discharge of serum was showing, which continued over into the fourth week, but by Sunday, twenty-eight days after the first application, the mass was completely dry and the crater completely filled with new granulation. Diathermy and infra-red were discontinued at this time.

The next day—Monday—the patient made his first trip to the office to look things over and on Tuesday started to do light work.

Since getting back to work, daily

applications of ultra-violet have been given and the wound, just seven weeks after the first application of high frequency, is entirely healed.

Now, I do not doubt that some of the readers of this article are wondering at my presumption in pushing myself into this case with a physician. Ordinarily it might appear as a piece of arrogance, but this patient was too valuable in my own life to lose in such a way, as he is my own brother and associated with me in the practice of physiotherapy.

I honestly believe that high frequency in carbuncle cases is specific. However, before this treatment is given, it is essential that a good drainage be obtained, as the neglect of this detail might cause the death of the patient from pyemia.

834 Rose Building



## Some Essentials in Full Denture Technic

By F. M. HIGHT, D.D.S., Houston, Texas

(Literary Collaboration by GEORGE WOOD CLAPP, D.D.S.)

### *Third Article*

#### IMPRESSION-TAKING

For a number of years the writer has used a full compound technic in the belief that it is superior to plaster of Paris for all impressions except in cases which will be mentioned.

The form of the tray in which the impression is to be taken is of great importance, because it largely governs the outline form of the denture, and the denture is dependent in no small degree on its outline and upon a "valve seal" for its success.

#### THE "VALVE SEAL"

Perhaps the importance of a valve seal can best be made plain by a description of what a valve seal is, and where the border of the maxillary impression must be located to give it the greatest value. In the sense in which the term is used here, a valve seal is such contact of the border of an impression or denture with the soft tissues as will keep air from getting under the denture in all jaw movements and insure maximum retention. For the maxillary impression there is a line for border location that will effect that maximum retention. If the border is located below that line, the impression may exhibit some retention, but it will be less than it is capable of.

If the border is located above that line, the valve seal will be broken by muscular action and the denture or impression will loosen.

The line that marks the ideal location for the border of the maxillary impression follows the line of the attachments of the muscles of the lips and cheeks to the underlying bone, except that it is a little lower. That is, if one were to trace on a skull a line representing the lowest point of the attachments of the lip and cheek muscles, from tuberosity around to tuberosity, and should then trace another line parallel to the first but slightly below it, the second line might indicate the location at which the impression border might make the most advantageous seal. This line would be high on the bony wall at some places and low at others.

The reason for this location is that just below the muscular attachments there is a fold of soft tissue that extends downward on the maxilla a short distance. It is movable by the muscles, but has no mobility of its own. If any maxillary impression is to have the maximum retention that may be secured, its border must be located on this fold of soft tissue just below the

point where it can be dislodged by any muscular movement of which the lips and cheeks are capable. Fortunately, such a location of the border is not difficult to achieve and with experience it can be accomplished very quickly.

#### THE FORM OF THE EDGE OF AN IMPRESSION

The retention of an impression is greatly influenced by the thickness of the edge of the labial and buccal borders as well as by the height. It is difficult to make an effective valve seal if the edge of the impression is very thin. When a thin edge is carried to the most desirable location to effect a valve seal, the denture is likely to cut the tissues so that it cannot be tolerated. It may make satisfactory contact with the tissues covering the jaw but not with the cheek tissues, and contact with both during all the movements of speech and mastication is desirable. If the edge is fairly thick, it can be made more blunt or rounding, even if the buccal or labial wall needs to be thin between the edge and the crest of the ridge.

Perhaps nowhere else is the importance of the thickness of the buccal edge more manifest than over the tuberosities. In many cases there is a cavity in the buccal wall above each tuberosity. When that cavity is extensive and deep, a thin-edged impression will not make a satisfactory seal.

During impression-taking the form of the ridge above each tuberosity should be examined by lifting the lip, but not the cheek, adjacent to the tuberosities. If the cheeks are seen to

be in close contact with the ridges in this location, only a moderately thick impression will be necessary. If the cheek tissues do not lie close to the ridge, the edge of the impression should be thick enough to insure continuous contact with both jaw and cheek tissues.

#### USING TRUPLASTIC WITH COMPOUND

If Truplastic is to be used as an impression material, it should be with a snap compound impression of the mouth used as a tray. The Truplastic impression referred to is not the thin plaster wash taken in a fairly close-fitting compound impression. It is here intended that when the impression is finished, there shall be a thickness of at least  $\frac{1}{2}$  mm. of Truplastic over the entire surface. The surface of the snap impression that comes in contact with the tissues is therefore cut away so as to permit this thickness of Truplastic. The borders are cut back to be a little shorter than the borders of the finished impression. The Truplastic must be mixed to a creamy consistency and must be used in the mouth before it begins to change character. This form of Truplastic impression is advantageous in cases presenting exceptionally large tuberosities or soft flabby ridges and for unusually large mouths.

The outline of the area to be covered by the denture should be the same, no matter what technic of impression-taking is used. The extension of the borders should be only sufficient to form a perfect valve seal. If the border is extended beyond this point, the

denture will cover tissues that should not be covered. The wearing of overextended dentures seems to hasten tissue resorption.

#### PURPOSE OF THE IMPRESSION TECHNIC

The object of the technic used by the writer is to take a satisfactory impression without tracing compound onto the impression at any point except across the posterior part of the palate. This technic is made possible, in part, by the facts that the tray is sufficiently rigid to hold the compound in the desired adaptation to the tissues, that the tray is trimmed to a height which will insure a considerable part of that adaptation, and that the space between the tray and the cast, after the tray has been adapted, is sufficient to permit the easy escape of excess compound during impression-taking.

#### THE MAXILLARY IMPRESSION

Take a snap impression and pour a cast. Adapt a stock tray to this cast in such way that there will be a space of about  $\frac{1}{8}$  inch between the cast and the tray at all points. Trim the tray to about the height and length desired in the finished denture.

Soften compound in water, attach it to the tray with dry heat in the usual way and take an impression just as the snap impression was taken. More care than formerly should be used in centering the tray and in seating it in such way that the compound will be of about even thickness all over the tray. There should be slight pressure on the outside of the lip, from cuspid to cuspid, to perfect adaptation in this region. Thoroughly chill in the mouth and remove.

An impression taken in this way is overextended. With a sharp knife trim the borders back to about what is thought to be proper extension. At the same time reduce the excess thickness of the borders. Return the impression to the mouth and test it for border height. When the impression is in place, the borders should make contact with the movable soft tissue which has been described.

The impression should be trimmed to such a length as will bring the posterior border on the band of movable soft tissue just posterior to the hard palate. Perhaps the best method of securing this length is to use the indelible pencil in the manner described by Tench.

Soften a tracing stick over the flame and trace compound along the posterior border of the impression from the tuberosity on one side to the median line of the palate, making a band about  $\frac{1}{4}$  inch wide anteroposteriorly. Temper this in hot water and, while the compound is soft, place the impression in the mouth and make slight pressure with a finger in the center of the vault. Remove from the mouth without chilling and dip in ice-water.

With a mouth blowpipe apply just enough heat to soften the compound which has been traced on, temper in water and replace the impression in the mouth, seating it first on the side opposite to that on which the compound was traced. Then seat it on the side on which the compound was traced by making pressure on the crest of the ridge on that side in the bicuspid and molar region.

Chill in the mouth. Remove from the mouth and trim the posterior border



to the length it had before the compound was traced on. Adapt the posterior portion of the other side in the same way.

Slight relief is made with a scraper over the area of any hard spots in the palate which have been disclosed by visual and digital examination.

Final tests for the stability of the impression should now be made. Perhaps the most important of these tests is to make downward pressure on the handle of the tray. This test should not develop any downward movement

of the impression. If such a downward movement is felt by the dentist, it is evidence of faulty adaptation of the impression, usually in the anterior portion of the palate and at the labial margin.

If the impression is unstable when vertical pressure is applied to the crest of the ridge on either side, it is evidence of faulty adaptation on the opposite side.

1323 Medical Arts Building

*(To be continued)*



## Pyorrhea, Both Preventable and Curable\*

By SAMUEL CHARLES MILLER, D.D.S., New York, N. Y.

Assistant Professor of Periodontia, New York University College of Dentistry; Consulting Periodontist, Newark (N. J.) Beth Israel Hospital

So much has been said about pyorrhea in popular advertising of tooth-pastes and dentifrices that this condition has become the bugaboo of civilization. This propaganda, coupled with the prevalent thought that pyorrhea is not curable, makes us feel as if it is only a matter of time until our teeth will eventually be lost. This is not so.

Rapid forward strides are being made in both medicine and dentistry. Diseases which not so very long ago were considered incurable now are responding to treatment. Thousands of lives are saved yearly which previously would have been sacrificed. For all this we should be grateful to the research workers and practitioners who have increased the sum of knowledge in the healing art and thus have prolonged the span of human life by many years.

Dentistry has also made rapid progress toward a health Utopia. Here, also, we find that conditions which previously mystified the members of the profession are now within their control. For example, it has been found that decay and pyorrhea are, in a large measure, preventable. Early application of the proper principles of diet and health and a correct routine of dental care, both by the dentist and

by the patient at home under proper supervision, will insure clean mouths and sound teeth, which are such important factors in the preservation of health and the prevention of disease, not counting the invaluable assistance that good teeth lend to our appearance, business ability and enjoyment of life.

I have been asked time and again, "What is the best time to institute preventive dentistry?" The optimum time to start preventive dentistry is before birth. Proper application of dietary principles by the expectant mother is most important, since it is she who influences the quality of the teeth of the child that she is to bring into this world. These precautionary measures not only will benefit the child, but will be of inestimable value to the preservation of the teeth of the mother during this period. The commonly quoted passage, "For every child a tooth," can no longer be recognized as truth. If the expectant mother is under the dentist's care as well as the physician's during this period and follows the few simple rules of diet and proper care of the mouth, not only will she insure the future dental safety of the little one, but she will herself become immune to the devastating influences so common at this time.

The diet during pregnancy should consist essentially of the following:

*Milk.* About one quart of milk a

\*A radio address given over Station WOV, May 26, 1931, under the auspices of the Oral Hygiene Committee of Greater New York.

day should be consumed. This should preferably be certified raw milk with its high vitamin content. Pasteurized milk is lacking in important vitamins which are necessary for proper bone development. Butter is also absolutely essential during this period.

*Cereals.* Whole-grain cereals such as cracked whole wheat, natural brown rice, Scotch or Irish oats, shredded wheat, and other products of a similar nature.

*Bread.* Whole wheat bread, whole rye bread or whole wheat muffins. No white bread should be consumed during this time.

*Vegetables.* An abundance of fresh raw vegetables should be consumed. Lettuce, carrots and celery have great value. Potatoes baked in the skin and baked or steamed vegetables have a high vitamin content. Potatoes boiled without the skins are practically pure starch and should not occupy an important place in the diet. Spinach and asparagus are valuable vegetable foods.

*Fruits.* At least one orange a day and other fruits as desired. Cooked fruits, such as prunes and figs, should have their place in the menu to prevent constipation. Tomatoes are of high vitamin content and can sometimes replace oranges in the diet.

*Eggs and cottage cheese* should take the place of meat as much as possible.

*Sweets.* Natural sweets such as honey, maple syrup, raisins, figs and dates. These should replace candy and pastries.

This diet should be continued throughout the nursing period.

There is no danger in having dental work done during the period of pregnancy. Necessary fillings should be inserted, prophylactic treatments should be given regularly, and it is even quite safe to have teeth extracted.

Proper child-feeding and intelligent application of child-care will carry the infant through the teething period with little disturbance and on through the time when the temporary teeth are cast off and the permanent teeth erupt. The formation of these permanent teeth will be superior, the material stronger, and the teeth will be in proper line if these principles are followed, and if the child is kept from bad habits such as thumb-sucking or lip-biting, and if mouth-breathing is avoided. Following through this regime the individual can keep his teeth healthy and yielding service throughout the entire span of life, as nature intended.

But my radio listeners are wondering what is going to happen to the present generation. What can be done for those of us who have already been afflicted with dental disease? The methods of replacing missing teeth have reached a high standard of perfection, but even this does not mean that we are just as well off with artificial teeth. The working efficiency of good false teeth is about 20%. This means that we get only one-fifth the chewing ability from perfectly constructed artificial-tooth replacements. Do you still think that this is as good as having your own teeth?

However, if you have teeth that are broken down or decayed to such an extent that the nerve is involved and the tooth is abscessed, or if you have

allowed pyorrhea to persist so long as to rot all the bone holding the tooth, then, of course, extraction must be resorted to. Many illnesses, as, for example, arthritis, rheumatism, neuritis, eye infections, sinus infections, stomach trouble, skin eruptions and other kindred ailments, have been traced to infected teeth. You see, then, that some teeth would only jeopardize your general health and must be sacrificed in spite of their local usefulness. When teeth are extracted, they should be replaced with artificial substitutes as soon as healing has taken place. Unless this is done, the other teeth shift and before very long food begins to crowd between the teeth, the gums become puffy and bleed easily, and disease soon makes its appearance. The teeth opposite the space where the tooth was extracted begin to grow down and, in a short time, the functioning of the teeth in chewing is greatly impaired. The advisability of taking teeth out should be left to your dentist or dental diagnostician. His advice on extractions and replacement is based on sound judgment and much experience. Follow what he says.

Pyorrhea involves a much broader field than you realize. We have been previously accustomed to wait until pus was evident or the teeth quite loose before considering that any disease was present. Let it be known now that when sufficient pus is present to be visible to the naked eye or when teeth are noticeably loose, it is one of the last stages of pyorrhea. It is no wiser to wait for this stage before instituting treatment than it is to wait until one lung is destroyed before treating

tuberculosis. It is in the early stages that the condition should be permanently arrested. It is in one of these early stages that many of my listeners will probably find their gums because of the modern mode of living, with its soft, pulpy food diet that is so conducive to dental ills.

If your gums are light pink with the edges thin and smooth with no irregularities nor thickening at the edges, and if there is no bleeding, no discharge from the gum margins nor loosening of the teeth, you can be fairly well assured that your gum tissue is healthy. However, if there is any change in color from the healthy pink, if there is any recession, bleeding (with or without brushing), pus, loosening or soreness of any of the teeth, if there is a tendency toward rapid formation of deposits on the teeth, then some stage of pyorrhea is present and the dentist should be visited promptly.

The diet of coarse raw foods did a great deal toward preserving the dental health of our cave-man ancestors, but the same exercise that the teeth should receive from this coarse-food diet can be replaced in a simple and logical way. The stimulating effect of the passage of meat fibers and bone spicules over the gum margins can be imitated by proper toothbrush massage.

In brushing the teeth, keep in mind that the toothbrush is not a scrubbing-brush but is an instrument to be used for massaging the gums and sweeping the teeth. A toothbrush with a small bristle head and very stiff bristles should be chosen for this operation. This should be placed about an eighth of an inch onto the gum margin at an

angle and swept over the teeth similarly to the way a paint-brush is used. A slight swaying of the bristles from side to side increases the massaging and cleansing efficiency of the brush.

Never scrub the gums or the sides of the teeth, because these are delicate structures and are very susceptible to injury. Remember that you yourself cannot clean your teeth, once they are actually dirty. That is the work of the dentist. Your duty is only to keep the teeth clean and the gums healthy, once that health has been established.

There is no preparation on the market with which you yourself can cure pyorrhea. The cure lies not in any patent preparation but in the establishment of the proper functioning health of the mouth by the dentist and the maintenance of this health by proper home care. Whatever benefit is derived from the tooth-brushing operation comes from the proper use of the brush itself. The dentifrice is only of secondary consideration. A good solution to use with the toothbrush is one of a half teaspoonful of table salt to a glass of water. Dip the brush into the solution and brush as I have just outlined. The teeth should be brushed at least twice a day, in the morning upon rising and in the evening before going to bed. At least five minutes should be spent on this operation at each session. After each meal the teeth should be swept clean with the brush, so that

no particles of food remain to decompose and produce trouble.

There is one point of interest that must be mentioned. Your teeth should be continually changing form as you grow older. The shape of your teeth is no more constant than the size and shape of the rest of your body. Everything is gradually but continually changing. The proper use of the teeth causes a wearing down, which is a *normal* process. When this wear does not take place, it must be produced by the dentist; otherwise the strain on the teeth will be too great and disease will set in. It is one of the most important steps in preventing and curing pyorrhea. The proper age for this treatment is usually in the twenties, but this judgment must again be left to the dentist.

Don't wait for pain before visiting your dentist to have your mouth examined! Pyorrhea is seldom, if ever, painful and often goes unnoticed until the advanced and, too often, hopeless stages are reached before it is recognized.

In some parts of China it is the practice to pay the physician to keep the individual well. Apply like principles to your teeth and see your dentist while there is no discomfort. Thus will you derive the true benefit of preventive dentistry.

57 West 57th Street





# The Equitable Service Distribution Plan

By ALFRED J. ASGIS, Sc.B., M.A., D.D.S., F.A.S.S., New York, N. Y.

## II

### THE NON-SCIENTIFIC DISTRIBUTION OF SUPPLY AND DEMAND

Pursuing the argument from the dentist's side to its logical conclusion, we may say that the solution suggests itself apparently without any further difficulty. The dentist's income can be readily improved in the following three ways:

- (a) By increasing the fees for services rendered.
- (b) By increasing the demand for dental services of active patients.
- (c) By increasing the number of patients.

A careful study of the history of dental economics and a consideration of the recent intensified interest of the profession in so-called *dental economics* will show that the dental profession did pass through the first stage (a) in the economic movement in dentistry.<sup>3</sup> The attempt to solve the economic problem with the aid of a routine system of office management or through improved *business methods* applied to dentistry appears to have reached the saturation point. This movement seems to be on the decline. The solution apparently cannot be found in the raising of fees—the philosophy of the business movement in dentistry.

To apply the other two methods (b and c) throws the whole problem

into a new focus. Neither the *early* dental economists nor the *lay* dental economists and few of our *contemporary* dental economists have recognized the fact that the static concept underlying the *business side of dentistry* cannot be adjusted to a dynamic society. They have equally failed to appreciate the fundamental distinction between dental services as competitive market *commodities* and dental services as *health factors* in national welfare. The nature of the whole dental economic problem changes with the adoption of the view that society is *dynamic*, and that dentistry is *progressive*. Once we make the dentist's income dependent upon public demand, we at the same time transfer the problem from its present individualistic or separatist position (of relationship between doctor and patient) to that of a problem between groups—between the dental profession and society. The individual's problem becomes a group problem.

We need not bring forth arguments to prove that the dentist's economic problems cannot be worked out satisfactorily by the individual dentist himself—a view not shared by the majority of the profession.<sup>4</sup> C. N. Johnson has presented an argument in favor of this view in the statement that "without a

plentiful supply of patients a practitioner can never achieve business success."<sup>5</sup> At the same time I question the economic soundness of the statement maintained by dental economists that "the ability to gain patients and hold them forms the first requisite of the real foundation for financial prosperity." Without qualification it might be implied to mean that those dentists who are in financial distress are so because they do not possess the "ability to gain patients" or because they were unable to "hold them," even after they had built a worth-while practice. I shall endeavor to show that we are not dealing with a situation in which the dentist, as an individual, plays the most important rôle. We must consider the economic malcondition to arise as a result of the present non-scientific arrangement of distribution of supply and demand. These variable conditions of supply and demand are entirely outside the control of the individual dentist, and he is not responsible for his inability to increase demand. The responsibility rests with the group, with social conditions.

Having thus transferred the emphasis of our problem from supply to demand, we must next take into consideration the factors that enter into the economics of dental services. These factors are:

- (a) The cost of production (supply).
- (b) The purchasing power of the people (demand).

Let us determine the purchasing power of the American people according to their annual income. According to Leo Wolman's data from the

SURVEY for June 15, 1927, we get the following information:

- 6% of families, annual income in excess of \$2,000.
- 90% of families, annual income under \$2,000.
- 67% of families, annual income under \$1,450.

These figures change the dentist's whole picture. What percentage of the American people, may I ask, can afford to pay for a dental contract amounting to \$200.00 or \$250.00 or more? On the other hand, what percentage of the 80,000 dental practitioners are now compelled—and many more so will be in the future—to render dental services to the 90% of the American people belonging to the \$2,500-income group? Here we note that it is of much concern to the non-associated or individual dentist to know whether he belongs to the small group of "dentist-aristocrats" who cater to the well-to-do or to the rank and file of dentists who serve the masses. Economically, in dentistry, we find ourselves at the parting of the ways.

Since our chief concern in the economics of dental services is the problem, "How can services be rendered by the majority of the profession to the majority of the people?" we must first determine what is the interest of each group in that problem. Let us state the question differently. How can the average dental practitioner, as producer, distribute his supply to the general public, as consumer, at a fee attractive enough and equitable to both which will yield the dentist a satisfactory income? Or, in terms of Michael M. Davis, Ph.D., "How much

can family dental budgets be increased by education? How much can the cost of dental service be reduced by planned organization of service or by various technical means?"<sup>6</sup>

In terms of supply and demand the question raised involves a knowledge of

- (1) Present family dental budgets.
- (2) How dental budgets compare with other items in the family budget in the scale of necessities and luxuries.
- (3) Should the dental budget be raised, and to what level?
- (4) Can the dental budget be raised?
- (5) By what means can it be raised?

While it is not within the scope of this paper to discuss every phase of the dental budget problem, some aspects will be touched upon. This phase of the economics of dental services, *i.e.*, the ability of the public to pay, is closely connected with its second phase, namely, the reduction of costs for dental services. There may be no need of looking for means of reducing cost if it can be shown that the family dental budget can be increased.

The following data give us the amounts spent by wage-earners' families for medical service:<sup>7</sup>

#### ANNUAL EXPENDITURES FOR MEDICAL SERVICES BY AVERAGE FAMILIES

- \$60.39 Wage-earner's family (U. S. Labor Statistics).
- 61.60 Farmer's family (U. S. Dept. of Agriculture).
- 80.00 Family of clerical personnel of insurance company.

Dr. Lee K. Frankel of the Metropolitan Life Insurance Company, in a paper on the *Cost of Medical Care*,<sup>8</sup> reported in a survey of 3,281 families (consisting of 17,129 persons) that the average annual expenditure for medical care is approximately \$140.00. Only 6% of the families studied reported no expense for medical care during the six months of the investigation; 20% (computing in terms of annual costs) paid from \$50.00 to \$100.00; and another 20% paid out from \$100.00 to \$200.00. Of the total expenditures for medical care 54% was the share of the private physician. The families that employed the services of a dentist paid out on an average of \$18.00 for the care of the teeth for the six months, or \$36.00 per year. Only 30% of the families reported expenses for the care of the teeth. The expenditures for dental services, according to this survey, were about 8% of the monies expended for *all* types of medical care.

According to the Medical Costs Committee's Survey of Shelby County, Indiana, the total cost to the people of Shelby County for the care and prevention of illness in 1928 was about \$538,000 or \$21.00 per capita, or an annual expenditure of \$84.00 for a family of four. Of this total \$55,180 was expended for the services of 13 dentists, or 10.3% of the distribution of the total expenditures for medical costs.<sup>9</sup> If we consider the present unorganized, arbitrary and non-systematized distribution of dental services to the people, with a percentage somewhere around 8% to 10% of the total medical costs, practical accounting and application of this percentage to the figures above will give us an average

of an annual dental budget of over \$20.00 (\$60.39, \$61.60 and \$80.00 equals \$201.99).

The following table<sup>10</sup> will give us some information as to the place of expenditures for dental care under present arbitrary budgeting arrangements:

receivers were sold than in any other year in the history of the industry. . . ."

Shall we say that dental services may not be placed on at least the same level as the national need for radios to the extent of raising the present expenditures for dentistry? It was estimated that \$150,000,000 per year is spent for

EXPENDITURES FOR MISCELLANEOUS ITEMS IN ONE YEAR, BY GEOGRAPHICAL DIVISIONS AND INCOME GROUPS

Item and Income Group (\$900 to \$2,500 and over)	All Families		Number	Families Purchasing	
	Average per family	Average per person		Per Cent of all families	Average per family
Sickness and Disability					
Physician .....	\$32.17	\$ 6.59	10,422	86.2	\$ 37.33
Dentist .....	8.23	1.69	5,602	46.3	17.17
Hospital .....	4.36	.93	1,290	10.7	42.76
Total .....	60.39	12.38	11,941	98.7	61.18
Liquor .....	7.18	1.47	3,598	29.7	24.12
Tobacco .....	16.56	3.39	9,728	80.4	20.59
Telephones .....	4.63	.95	3,425	28.3	16.35
Automobiles } Motorcycles } Bicycles }	16.33	3.35	1,868	15.4	105.77

It is interesting to observe what has been accomplished to increase sales in the radio field. According to a report in *The New York Times* for February 28, 1931, ". . . more than 15,000,000 radio receivers of all types operated in American homes on January 1, 1931, and retail sales of radio equipment during 1930 amounted to \$500,951,000, as against total sales volume of \$842,548,000 for the previous year. This report was released and made public on February 27, 1931, by *Radio Retailing* in its annual survey for the radio industry. It is interesting also to note that in 1929 more radio

dentistry, while \$500,951,000 is spent for radio equipment. Who is at fault, or what is at fault? Why does the question of increasing the family dental budget call forth the problem of reducing dental costs? Even with the present low family dental budget a *scientific system* of distribution of dental care, satisfactory from the standpoint of the dentist's income, could be introduced to meet the present effective public demand.

A recent study of school teachers' budgets in New York State showed that an allowance of approximately \$10.00 a year is provided for dental

services for women teachers with an annual income of \$1,200. Michael M. Davis's comment on this point is indeed illuminating. He says: "If this rate of expenditure actually existed throughout the whole population of Chicago, the average income of dentists in this city would exceed \$10,000 per year."<sup>11</sup>

It is claimed that middle-class families, with low incomes, complain of the high cost of dental service. At the same time reports are available to show that persons with incomes ranging from \$1,800 to \$2,400 a year spent for dental services within a few months' time the sums of \$175, \$245, \$285 and more. Let us take a dentist who is occupied full time in rendering one type of dental service, for example, amalgam fillings. According to Dr. Davis, "the dentist who charges \$6.00 for an amalgam filling, taking him half an hour, is charging at a rate (working 1600 chair hours) that would yield him a net income of only \$6,400 a year. Dr. Christiansen finds that a dentist loses 600 out of his 2,000 hours of service per year for which he is not paid. He believes that seven office hours per day is all the dentist should give to dentistry to maintain efficiency."<sup>12</sup>

Nevertheless we are told that dental fees are too high and various suggestions have been offered to lower fees. There are those who would not concede that it is the lack of system or scientific distribution that is at fault in this dental social abnormality rather than high fees, the high cost of dental care, or other factors. The lowering of the cost of dental services, often confused with fees, has become almost an

inseparable part of the dental economic problem. Thus Dr. Davis formulates the problem as follows:

"The great economic problem ahead of the dental profession is the transformation of latent demand for dental service into effective demand. This transformation can be assisted by educational measures, but will not proceed far as long as the cost of service seems high in comparison with other expenditures which large groups of the population feel to be necessary charges on their limited incomes."<sup>11</sup>

Dr. Davis further offers the following (which is really the application of the *recommendation* or *general principles* above to the solution of the dental economic problem):

"The chief measure for transforming latent demand into effective demand for dental service is the lowering of dental costs. I believe this can be done through dental clinics, which would lessen overhead as compared with individual dental offices, and which would organize the mechanical and non-professional elements in dental service on a larger scale and a more economical basis than is possible for the private practitioner."

Other plans for reducing cost and fees, or both, besides the *pay* dental clinic, are:

- (1) Philanthropic (charity) dentistry.
- (2) Preventive dentistry.
- (3) Level dentistry.
- (4) Cooperative dentistry.
- (5) Insurance dentistry.
- (6) Panel dentistry.
- (7) State dentistry.

All these plans aim apparently to increase consumption and the purchas-



ing power of the people. Theoretically these plans may appear economically sound, but how do they work out in practice? Preventive dentistry—not to be identified with preventive medicine in terms of public health activities—to be of any practical value, is expensive. It costs something, no matter how little. Of course, it would be an ideal state of affairs if we could by some miracle eliminate the need for dental service. But this Utopian state is unfortunately not here. All *scientific* dental care, whether for children or adults, may be classed in the present sense as *preventive dentistry*, and it is expensive at best. Preventive dentistry, as such, is not an economic solution.

Level dentistry, where it is intended to train special technical operators for special jobs, such as is proposed by Millberry, Owre, Leonard and others, involves the problem of the *quality* of dental service under such a practice system. Again, level dentistry is not an economic solution. It is rather a dental educational approach that is assumed to have some economic features. We might also show that the economies in level dentistry may in the end prove to be based on an unscientific dental economics, which in turn may call forth the original problem of economics.

Cooperative dentistry is an attempt to cut down overhead. While it has the merits, on the scientific side, of all group practice in regard to its promise of quality, it fails as an economic solution. There is a debit and a credit side to every business transaction. Cooperative dentistry overlooks demand.

Insurance dentistry—if it does not

ignore the dentist's economic side of the problem, and if it is not *clinic* dentistry—fails to solve the problem of reducing costs because its dental services to the insured are rendered by the individual dentist or dissociated from the group dentist. Even in state dentistry, of which the panel system is a typical form in operation in England, we as a profession do not escape those problems which we are called upon to meet at the present time. The state foots the bill.

However, we cannot have a fair understanding of these issues unless we have some fair conception of how *cost* of dental services is determined and *how* it can be reduced.

#### REFERENCES

3. Apgis, Alfred J., *The History of Dental Economics*, AMERICAN JOURNAL OF STOMATOLOGY AND ODONTOLOGY, January, 1930.
4. Spies, W. F., *Dental Economics*, THE DENTAL COSMOS, February, 1931.
5. Johnson, C. N., *Certain Phases of Dental Economics*, THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION, September, 1930.
6. Davis, Michael M., *Dental Care and the Family Budget*, THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION, November, 1928.
7. Rankin, S. W., *The Economics of Medical Service*, AMERICAN JOURNAL OF PUBLIC HEALTH, April, 1929.
8. Frankel, Lee K., *Cost of Medical Care, Results of Study Presented before the Committee of Costs of Medical Care*, November 25, 1929.
9. Peebles, Allon, *A Survey of the Medical Facilities of Shelby County, Indiana, 1929*, Publication No. 6, June, 1930, Committee on Costs of Medical Care.
10. *Cost of Living*, Bulletin of the United States Bureau of Labor Statistics, No. 357, May, 1924, Government Printing Office, Washington.
11. Davis, Michael M., *The Status of Dentistry in Our Economic System*, THE JOURNAL OF THE AMERICAN DENTAL ASSOCIATION, May, 1930.
12. Christiansen, John F., *Economics in Office Practice*, PACIFIC DENTAL GAZETTE, August, 1930.

509 Madison Avenue

(To be continued)

## Ethics

By G. R. T. RICHARDS, D.D.S., Arkansas City, Kans.

Ethics—a much worn subject, but, like an Oriental rug, the more worn, the more valuable it becomes. Ethics is a word that will ever be held before the eyes of the members of the allied professions and the students thereof. No program of any of the medical or dental societies is complete without at least one paper or lecture on the subject. From the time the would-be professional man enters the front door of his college until he is graduated therefrom he hears this word at every turn of the wheel. Yet does he, more than one time in ten, get its proper meaning? About all that he gathers from the many talks that he hears is that it is unethical for him or any of his professional brethren to advertise, and that if they so far forget themselves as to use printer's ink to help them to a place before the public eye, they will be cast into outer darkness for the rest of their days.

Yea, we must not use printer's ink to tell the public what fine fellows we are, but we can go for a ride over to our neighboring town and come back to our own home and tell the paper that we were over there on professional business (?). Of course this is not advertising nor unethical. Just as long as we can get the printer's ink without paying for it, it is O.K. So remember to be careful or the goblins will get you, if you don't watch out!

But, laying all jokes aside, doesn't ethics mean something more than just

the use of printer's ink? The Welsh Calvinistic faith teaches that ethics and morality are synonymous, and that both point to the path of right living. Furthermore, no book of synonyms nor any dictionary says a single word about the use of printer's ink. In Matthew VII:12, of the St. James Version of the Holy Writ, we find the following statement: "Whatsoever that ye would that men do unto you, do ye even so unto them." If the members of the professional world would but regulate their lives by this direction, there would be no need of a board of governors for any society of professional men or women.

It is a lamentable fact that only a few of our colleges today give the subject of ethics any serious thought. Inferior and so-called colleges never mention the subject. Only a few of the larger colleges give it more than a passing notice. In short, the idea that the average student carries out into life with him is that the word *ethics* deals only with the subject of advertising, while in reality this word and its synonym dig deep into the life of every professional man. They have a great deal to do with every professional man's life professionally, mentally and morally. They should regulate every act of the professional practitioner.

In any standard dictionary we shall find that we are referred to the word *moral*, which has for its root the Latin *mos*, *moris*. The Greek and Latin

meanings are the same and indicate a course of habitual conduct. Therefore the two words, being synonymous, are meant to refer to a system of right living or action, habitual with the individual and sanctioned by the customs of the society in which he lives.

Society does not sanction the wrecking of another's reputation so that the wrecker may climb to success over the wreckage, but it does sanction the kind word and act of each and every member of the greatest of professions. In short, it means rather that if nothing good can be said, it is well not to say anything. A kind word costs nothing and is an aid both to the sayer and to the one about whom it is said. It is an act of right living heartily sanctioned by the society in which one lives. The knocker is never popular and sooner or later meets his reward.

This brings to mind an event which occurred approximately forty years ago. In a little town in the State of Illinois there were two doctors. One of them was just graduated from college, while the other was a gray-haired patriarch of the profession who was rather prone to look upon the wine when it was red. During these lapses from grace his patients would wander into the office of the younger man for treatment. This young man had learned the true meaning of the word *ethics* and would care for these cases and refer them back to their doctor as soon as he was well (?) again. Never did an unkind word escape him about the failing of his older competitor, who was at heart an estimable old fellow. After such cases had become the rule the older fellow met the younger man and exploded as follows: "Say, young

fellow, how do you expect to make a living by sending all my patients back to me after I have been on one of my 'toots'?" The reply was rather a "stunner" to the older man. It was: "Doctor, I do not believe that a man can prosper unless he lives up to the meaning of the word *ethics*. I believe that the Golden Rule is an example of the word *ethics*, and I believe that you would care for my patients temporarily if I was unable so to do. I shall continue to care for your cases as I have been doing, as I believe that is the meaning of the word *ethics*." The older man was a gentleman of the old school, though a lover of strong drink. He looked the young fellow over, then blew up with: "Ethics! That's fine for an old fool like me, but rather hard on a young fellow like you. Hereafter when I go on a bender and any of my patients come to you, you care for them and do your best for them." Here was a matter of ethics from both sides of the case, courtesy in the younger man and kindness and appreciation in the case of the older man. Each of these men tried to care for the welfare of the other.

It is an unfortunate fact that ethics has come to refer to the principles of right in the abstract, with reference to the individual character and its complete development in accordance with the laws of our societies. In other words, every individual has his own ideas of the meaning of ethics and applies them accordingly, often to the detriment of every one but himself.

The word *moral* refers to action as affecting the community and sanctioned by social and religious law.

Therefore our lives should be so ordered as to be above reproach both professionally and socially, to be wholly within the spirit of the word *ethics*.

Philosophically speaking, ethics has meanings other than the primary meaning, while morally speaking it has a meaning from a religious and practical standpoint.

When we speak of something as being ethically right, as in the case of the young doctor mentioned above, we suggest that we are going back to first principles and judging it as a matter of abstract right and wrong. When we speak of something morally wrong, as in the case of the drink habit of the older doctor, we are thinking especially of the act in relation to society and social judgments.



[CURETTAGE]

*The writer believes that it is a dangerous practice ruthlessly to destroy the defensive barrier that nature has built around the apex of a diseased tooth, as it is possible by this procedure to let loose into a patient's system many dangerous bacteria and their toxins. It is a much safer procedure to swab the post-extraction alveoli with equal parts of half-strength iodine and glycerin, keep the wound open, and let nature throw off the granuloma or limiting membrane in her own manner. I also believe that it takes a long time for nature to throw off bacteria from an infected post-extraction wound. Many times we do not eliminate bacteria from the jaws by the mere extraction of teeth. Some writer stated that from 20% to 40% of edentulous mouths harbor residual areas of infection. Infected root-ends and cysts play an important rôle in the above picture.*

—DUNNING.

## Some Questions Pertaining to Dental Jurisprudence

By HERMAN IVANHOE

School of Dental and Oral Surgery, Columbia University, '31

(Continued from August)

### REVOCATION OF LICENSES

Without doubt the enforcement of statutes providing for the revocation of dental licenses for cause has redounded to the benefit of both the general public and the dental profession, and while the right of a legislature to enact statutes of this kind has been quite generally upheld, the courts are not precisely in accord on the question of how the causes for revocation should be defined.

*Richardson vs. Simpson, et al, State Board of Dental Examiners, 88 Kansas 684.* The Kansas statute upon which the action was predicated provided among other things that the State Board of Dental Examiners might revoke the license of dentists "who have, by false or fraudulent representations, obtained, or sought to obtain, money or any other thing of value, or have practiced under names other than their own, or for any other dishonorable conduct."

Richardson, the plaintiff, was a dentist engaged in the practice of his profession. A complaint against him was made before the State Board of Dental Examiners, predicated on an alleged violation of the provisions of the law quoted from in the preceding paragraph. This complaint alleged that he had been guilty of obtaining money by false pretenses and of dishonorable conduct. Under this it was specified

that he had performed services for a patient under promise to make needed repairs without charge, and that after receiving payment in full he had refused to make repairs that became necessary by reason of defective work.

The board investigated the matter and, after hearing the evidence, issued an order revoking Richardson's license. The latter thereupon brought the instant action in the district court to enjoin the board from enforcing its order and, being successful, obtained a permanent injunction. The board then prosecuted an appeal to the Kansas Supreme Court.

The two principal contentions of the plaintiff seem to have been: (1) that the conduct complained of did not amount to obtaining money under false pretenses; (2) that the provision of the statute providing for the revocation of a dentist's license for "dishonorable conduct" was void for uncertainty. In passing upon the first of these contentions the court, after stating that the decision of the board was final on questions of fact relative to whether a license should be revoked or not, so long as the board acted in good faith, in part, said:

Whatever should be the rule in a criminal prosecution, the making of a promise, without any intention of performing it, should be regarded as a false pretense, within the meaning of the statute here involved. Of course, the



mere failure of Richardson to keep a business agreement would not be a ground for revoking his license; but the evidence warranted the belief, upon which the board obviously proceeded, that he knew the work was defective when he collected pay for it, and that he had no intention of making the repairs.

The court next directed its attention to the plaintiff's second contention, i.e., that the term *dishonorable conduct* was too vague to permit of its enforcement as a ground for the revocation of his license. In passing upon this phase of the case it was, among other things, said:

The plaintiff contends that the portion of the statute warranting the revocation of a dentist's license for "dishonorable conduct" is unconstitutional and void, because the phrase is too indefinite to be made the basis for such action. Several courts have held in accordance with that contention, the argument being that a course regarded by one person as dishonorable may not seem so to another; and there is no fixed standard by which the disagreement can be settled. . . .

The court then, after reviewing and citing a number of authorities on the question, stated its reasons for declining to approve of the plaintiff's contention in the following language:

We think it is going entirely too far to say that such a provision is a nullity. Before a license to practice dentistry is issued, the applicant is required to furnish proof that he is "of good moral character." . . . The phrase is general; but no great practical difficulty attends its application. The courts which make a distinction between general language used in defining the conditions upon which one may be originally permitted to practice and similar language used in stating the grounds upon which the permission may be withdrawn proceed upon the theory, not accepted by this court, that the revocation of the license is essentially a punishment. The evil results, the fear of which has occasioned the decisions against the validity of provisions authorizing the revocation of a practitioner's license upon general grounds, can be avoided by reasonable interpretation.

The court next directed its attention to how the term *dishonorable conduct* should be interpreted, and in making

the application to the instant case it was said:

Doubtless no conduct should be deemed "dishonorable" in such a sense as to warrant a forfeiture of a dentist's right to practice, unless it occurs in connection with the exercise of his profession and involves moral turpitude. The expression *other dishonorable conduct* may be interpreted to mean conduct of the same general character as that already specified. . . . Whether or not the conduct of Richardson, as narrated by Mrs. Brack (the complaining witness in the instant case), constitutes what might be technically described as obtaining money by false pretenses, it was a dishonorable conduct of a similar kind.

In conclusion the Supreme Court reversed the judgment rendered by the trial court in favor of the plaintiff, Richardson the dentist, and ordered that judgment be entered for the defendant board.

*Green et al, Arkansas State Board of Dental Examiners vs. Blanchard*, an Arkansas case reported in 211 S. W. 375, 5 A. L. R. 84. The Arkansas statute regulating the practice of dentistry gave power to the State Board to revoke dental licenses for cause. There were a number of grounds upon which revocation might be predicated, among them the following:

The publication or the circulation of any fraudulent or misleading statements as to the skill or method of any person or operator. Or . . . in any way advertising to practice dentistry or dental surgery without causing pain or advertising in any other manner with the view of deceiving or defrauding the public or in any way that would tend to deceive the public. . . .

The State Board of Dental Examiners revoked the license of Dr. F. A. Blanchard for alleged violations of the statute quoted from above. The evidence upon which the board based its judgment, it seems, consisted of advertisements which Dr. Blanchard had used in the conduct of his practice.

Among the exhibits of this kind appeared the following, which illustrates the nature of the advertising matter used:

Blanchard's Dentists are Specialists. Each Thoroughly Efficient in His Own Line. Dental Work is divided into parts at Blanchard's. If a tooth is to be pulled, you are attended by an expert extractor, who understands this thoroughly. If a crown is to be made, an expert laboratory man does this, and so on. You are thus assured of work as good as the best.

From the order of the board revoking his license Dr. Blanchard appealed to the circuit court, where a judgment was rendered setting aside the order of the board. The board thereupon prosecuted an appeal to the Arkansas Supreme Court. On this appeal the board relied on the power given it under the portions quoted from above, contending that the words *deceiving or defrauding the public* included the acts of Dr. Blanchard proved by the board, the contention, it seems, being that it would have been impossible for the legislature to set out in detail all acts which these words embrace, and "that their meaning should be considered by the common judgment of mankind."

In answer to this it was contended that the provisions of the statute relied upon by the board were "so vague and indefinite as to make the statute inoperative and invalid for that reason."

The court decided that:

It does not advise the dentist in advance of what act or acts may be in violation of the provisions. Subdivision 2 and the words, "deceiving or defrauding the public," have no common law definition. They are not defined in the statute and have no generally well-defined meaning in the decision of courts. Under the statute a dentist might do an act neither violating moral law nor involving moral turpitude, and which he regarded as strictly proper, and still his acts might, in the opinion of the board, be such as were calculated to deceive or defraud the public. Different standards might be estab-

lished by different boards. It is well known that the different schools of medicine and even of dentistry have widely divergent views as to the treatment of certain diseases. It must be remembered that the statute does not prohibit advertising, however unprofessional and unethical we might consider that to be. It only prohibits advertising with the view of "deceiving or defrauding the public or in any way that would tend to deceive the public." So the members of one school of medicine or dentistry might advocate a certain treatment and in good faith advertise it to the public, which might be condemned by members of another school as calculated to deceive and defraud the public. The members of the profession are usually men of intelligence and good citizens. We do not believe that they would be guilty of such a multiplicity of wrongful acts that their conduct could not be safely regulated by a specified legislative enactment. . . .

However, the court made it perfectly plain that it upheld the right of the legislature to enact a statute providing for the revocation of dental licenses, but it was pointed out that such a statute should designate, or make clear, the acts which would warrant the exercise of such power. On this point it was said:

It is competent for the Legislature to declare for what acts or conduct a license may be revoked, and to vest in state boards the authority to investigate and try the charges which may be made under a statute; but the statute should specifically name or designate the offenses or wrongful acts which shall constitute a cause for revoking his license, so that the dentist may know in advance whether he has violated the terms of the statute. . . .

The court, in conclusion, after disposing of other features of the case not material to this article, affirmed the judgment of the circuit court setting aside the order revoking Dr. Blanchard's license, holding, as outlined in the opinion, that the parts of the statute relied upon by the board were too uncertain and indefinite for enforcement.

By the weight of authority statutes authorizing the revocation of dental licenses for cause are valid, even though

the causes are stated in general terms. On the other hand, the minority rule holds that for such statutes to be enforceable they must specifically define the causes for revocation, so that those concerned may know in advance what act or acts will constitute grounds for such action.

#### RIGHT OF PHYSICIAN AND SURGEON TO PRACTICE DENTISTRY

The question of the right of a physician and surgeon to practice dentistry, by virtue of his license as a physician and surgeon, is one of interest to both professions. And in this connection it may be stated broadly that, in the absence of a statute to the contrary, one duly licensed to practice medicine and surgery would, it seems, have the right to practice dentistry on the ground that the practice of dentistry is a branch of surgery, and a license to practice the latter would include the former.

Thus in *State vs. Beck*, 21 R. I. 288, the defendant, a duly licensed physician and surgeon, was indicted for the alleged unlawful practice of dentistry. In his defense the defendant entered a plea in bar in which he set up the fact that he had been licensed to practice medicine and surgery in all its branches "upon all parts of the human body, including the teeth," the contention being that, as dentistry was a branch of surgery, the defendant's license to practice the latter would cover his practice of the former without special compliance with the dental statute.

To this plea in bar the attorney general demurred. The case then reached the higher court on the pleadings, and,

in deciding the question raised, the court first examined the statute regulating the practice of medicine and surgery in connection with the act regulating the practice of dentistry. In stating its conclusions the court reasoned, in part, as follows:

Now, by the express terms of said Chapter 165, a person holding a certificate, in accordance with the provisions thereof, is authorized to practice medicine and surgery in all its branches. Dentistry is now a well-recognized branch of surgery. A dentist is a dental surgeon. He performs surgical operations upon the teeth and jaw and, as incidental thereto, upon the flesh connected therewith. His sphere of operations, then, as before intimated, is included in the larger one of the physician and surgeon. A fair and reasonable construction of the two statutes taken together, therefore, comes to this: that the general assembly, by the use of the broad and general language used in said Chapter 165, relating to the authority to practice medicine and surgery, must be held to have intended to except physicians and surgeons from the restrictions imposed upon other persons regarding the practice of dentistry by said Chapter 165 and the amendments thereto.

This view is strengthened by the fact, which is common knowledge, that it has always been the custom in this State, and probably everywhere else, for physicians to treat ailing teeth, to extract teeth and to perform various other professional services which technically come within the purview of dentistry. Physicians who reside in the country towns especially have always been called upon, to a greater or less extent, for the performance of such services. And now to prohibit them from thus treating their patients would be a source of great inconvenience and, in many cases, of extreme hardship and suffering to the latter, as well as an interference with the purpose and legitimate functions of the former. And, as said by defendant's counsel, any construction of the law that prevents the general practitioner from treating any part of the human body, or restricts him in the discharge of his professional duties, would be a menace to the public health and would deprive the physician of the right to practice a branch of his profession that is as old as the history of medicine itself.

After further consideration of the question before it the court concluded by sustaining the defendant's plea in bar, holding that under the laws of Rhode Island one duly licensed to prac-

tice medicine and surgery was entitled to practice dentistry, as a branch of surgery, without complying with the particular statute relating to the practice of dentistry.

But in *State vs. Taylor*, 106 Minn. 218, the defendant, a licensed physician and surgeon, was convicted of practicing dentistry without a license under the Minnesota dental act. This act, among other things, provided as follows:

No person shall practice dentistry in the state without having complied with the provisions of this subdivision. . . . Any person who shall . . . violate any provisions of this subdivision shall be guilty of a misdemeanor. . . . All persons shall be said to be practicing dentistry, within the meaning of this section . . . who shall for a fee, salary or other reward paid or to be paid either to himself or to another person . . . replace lost teeth by artificial ones.

The defendant, it appears, extracted two teeth for one of his patients and took an impression which he sent to a dental laboratory. Thereafter the artificial teeth were returned to the defendant, who, in turn, delivered them to his patient, receiving a fee of \$38.00 for his services.

It was conceded that the defendant did not have a license to practice dentistry. The defendant, however, contended that his license as a physician and surgeon entitled him to "engage in the incidental practice of dentistry on his own patients," on the ground that the practice of medicine and surgery included the practice of dentistry. The case went up on appeal, and, while conceding that the practice of medicine and surgery included the practice of dentistry "in its broad and comprehensive sense," the court in reply, in part, said:

But for reasons of public policy, with which we have no particular concern, the Legislature adopted the policy of dividing the field of medicine and surgery and making a separate profession of a part thereof. . . . It was thought that men who engage in the treatment of the diseases of the dental organs should receive

special preparation and be specially licensed to practice that particular branch or department of medicine and surgery. . . . A State Board of Dental Examiners was created and authorized to determine who should be licensed and entitled to practice dentistry in the state. . . . A department of dental surgery was also established at the university, with a course of study the satisfactory completion of which would entitle the student to a special degree of dental surgery. An examination of this course shows that it includes a considerable part of the work required in the medical school, but it includes also studies which relate particularly to diseases of the dental organs and others designed to insure efficiency in the mechanical work connected with the treatment. . . .

And the Legislature has thus defined both the practice of medicine and the practice of dentistry and made of them two distinct professions. This statute relating to dentistry makes no exception in favor of one who holds a certificate entitling him to practice as a physician and surgeon. We can find no implied exceptions in this statute. The words "no person," in a criminal statute, are to be given their literal meaning. From an examination of the statutes of other States relating to the practice of dentistry we learn that many contain express exceptions in favor of physicians and surgeons. Probably the most of them permit physicians to extract teeth or perform such other comparatively simple work. In the absence of any such exceptions we must conclude that the Legislature intended to restrict the scope of the practice of the physician and surgeon and require him, if he desires to practice dentistry, to obtain a license from the State Board of Dental Examiners in addition to his other certificate. . . .

In accordance with the foregoing opinion the court concluded by affirming the judgment of the lower court, in which the defendant was convicted of practicing dentistry without a license, holding that the possession of a license to practice medicine and surgery did not entitle the defendant to practice dentistry in Minnesota unless he also complied with the dental statute and obtained a license to practice dentistry.

And so it seems that, in the absence of a statute to the contrary, one holding a license to practice medicine and surgery will also have the right to practice dentistry. And in the states which

except physicians from the operation of their dental acts, either entirely or in part, physicians of course have the right to practice dentistry so long as they keep within the restrictions, if any, of the dental act. However, in the states where the practice of dentistry has been made a separate profession from medicine, and where physicians and surgeons have not been excepted, the court decisions construing them are not in accord.

#### LIMITATIONS UPON THE PRACTICE OF DENTISTRY IN RESPECT TO OVERLAPPING INTO THE FIELD OF MEDICINE OR GENERAL SURGERY

The question of the limitations upon the practice of dentistry in respect to overlapping into the field of medicine or general surgery appears to be one of interest to dentists in general. Especially does this seem true in cases where a dental practitioner is perhaps specializing in oral surgery, for example, and does not hold an M.D. degree in addition to his D.D.S.

In *Carpenter*, 196 Mich., 561, the claimant was a duly licensed and practicing dentist. The decedent, it appears, had suffered for some months from an incurable cancer of the mouth. The claimant treated the decedent up until the time of her death and thereafter filed a claim for services rendered against the estate of the decedent. The nature of the services rendered are clearly shown by the bill of particulars, which greatly abbreviated was as follows:

To treating and cleansing cancer of the mouth three times a day—77 days, at \$2.00 per day.....	\$154.00
To treating and cleansing cancer four to six times a day—64 days, at \$3.00 per day.....	192.00
April 14, 1915. Cocain and antiseptic.....	4.00
June 1, 1915. Cocain and antiseptic....	4.00
June 23, 1915. Cocain and antiseptic....	4.00
	<hr/>
	\$358.00

Certain payments had been made upon the bill which reduced it to the sum of \$138.00 at the time it was filed against the estate. Upon the trial of the case the evidence showed that the decedent had been attended by Dr. Huntington, a regular practicing physician and surgeon; that Dr. Huntington knew that the claimant was caring for the cancer, and that he had, in fact, instructed the claimant to "administer antiseptic and anesthetic drugs."

Upon the conclusion of the claimant's case counsel for the estate asked for a directed verdict. This request was made upon the grounds, among other things, that "the services rendered by claimant were rendered for the treatment of a cancer by a man not shown to be legally qualified to practice medicine in the State of Michigan, that is, a treatment in violation of the law."

The court denied the motion for a directed verdict and submitted the case to a jury. The latter returned a verdict for the full amount claimed to be due, and the estate prosecuted the instant appeal from judgment thereon. In stating the principal question before it the higher court said:

The only question of importance involved in this case is whether the claimant in doing what he did for the decedent was engaged in the practice of medicine contrary to the provisions of Act 237 of the Public Acts of 1899, as amended.



The record shows beyond question that the treatments administered by the claimant were so administered from the very first under the direction of a duly qualified physician. . . . It further shows that such treatments were necessarily administered from three to six times each day, the lesion in the jaw being extremely painful and emitting a discharge highly offensive in odor. It further appears that in the administering of said treatments some skill was required. We are of opinion that claimant was entitled to recover upon either of two theories: first, that the services rendered were those of an ordinary nurse under the direction of a competent and duly qualified surgeon; and, second, that they were rendered by claimant as a duly qualified dentist under the provisions of Act 183, P. A. 1913, Section 7 of which provides:

"Any person shall be said to be practicing dentistry within the meaning of this act who shall treat diseases or lesions of the human teeth or jaws, . . . or who shall, for a fee, salary, or other award paid or to be paid, . . . treat diseases or lesions of the human teeth or jaws."

The treatments administered by the claimant would clearly fall within the definition of the practice of dentistry contained in the statute. We are of opinion that claimant in rendering the services for which claim is made was not practicing medicine within the meaning of Act 237, P. A. 1899, nor of Act No. 368, P. A. 1913. . . .

In conclusion the court affirmed the judgment rendered below in favor of the claimant, holding, as outlined in the opinion, that the treatments given by the claimant were clearly such as he was authorized to give as a duly licensed and qualified dentist.

#### DEGREE OF CARE EXERCISED IN THE PRACTICE OF DENTISTRY

Broadly speaking, the law requires that a dentist, in the practice of his profession, use the ordinary care used by other practitioners of ordinary skill in his locality. It follows that, in a given case, the question of whether or not the dentist has satisfied the requirements of the law will usually be a question of fact depending upon all

the facts and circumstances surrounding the particular case.

In *Robbins vs. Nathan*, 179 N. Y. S. 281, the plaintiff went to the office of the defendant and told the latter that one of her teeth was "bothering her." The defendant examined the offending tooth, which was crowned with an artificial crown supported by the natural crown, and, removing the crown, ascertained that the tooth was not filled. The defendant then made a radiogram, from which he found that the root contained decomposing organic matter. The defendant thereupon advised the plaintiff that the tooth should be extracted.

The plaintiff agreed to this and requested that gas be administered. Great difficulty was experienced by the defendant in bringing about complete unconsciousness in the patient, but finally with the aid of a trained nurse, who was in the employ of the defendant, and the plaintiff's husband, who it seems arrived at the office at this time, the defendant succeeded in administering sufficient gas, and the tooth was extracted.

Thereafter the plaintiff brought the instant action against the defendant for damages. In support of this, to paraphrase, the plaintiff, among other things, claimed that in removing the tooth it was broken, that the defendant made repeated efforts to extract the root, that in the course of these efforts the defendant administered cocaine, breaking the needle of the instrument used, and that the broken needle was removed from her gum with forceps. She claimed also that following the operation she fainted, that thereafter her mouth was very sore, that pieces



of bone and flesh were subsequently cut away by another dentist to whom she applied for treatment, and that she was thereafter treated by this latter dentist, also by a physician, and spent some time in a sanitarium.

Upon the trial of the case in the lower court the plaintiff recovered a verdict against the defendant for alleged malpractice. The defendant carried the case up on appeal, and in reviewing the evidence and deciding as to its sufficiency to place liability upon the defendant the higher court, among other things, said:

It seems to me that this case necessarily involves a holding that if a person has a tooth extracted and thereafter his mouth is sore or he is ill, the dentist is responsible. This is not the law. The court correctly charged the jury:

"The defendant was not a guarantor of his work, or the result that would follow; he is not an insurer as to the result. In other words, in this case he was required to use the ordinary care of such a man having the ordinary skill in this locality; and, if he does not, the mere fact that there is a bad result is not enough, but you have got to trace it to his lack of skill or his negligence."

Applying that rule, what facts are there upon which to base a finding of the defendant's liability? The defendant extracted the plaintiff's tooth, but there is not a hint or claim that it was not necessary. He administered gas and had some difficulty in doing so. The plaintiff desired it, and there is no proof that it was improper to do so, that too much was administered, or that it could have been done by any other method. Her mouth bled, but this is usual, ordinary and unavoidable. The cavity looked large to the plaintiff. Again this was the usual and ordinary result. No one else having special knowledge upon the subject confirmed her opinion. She had difficulty in talking. Two teeth had been removed—one natural tooth and an artificial tooth attached to it. This difficulty was disagreeable, natural and temporary.

Plaintiff claims her lips were cut and bleeding. When plaintiff struggled, so that even with the help of a nurse defendant was unable to administer gas and was able to do so only with the added assistance of plaintiff's husband, this result cannot be attributed to any lack of skill or negligence upon the part of the defendant. These are all of the immediate physical effects of the operation. It is true that the plaintiff

was ill afterward, and that illness may have been attributable to the extraction of this tooth, but that does not warrant holding the defendant liable, as he does not, under the law, guarantee the result.

If the treatment of the defendant was unskillful or negligent, it was incumbent upon the plaintiff to show it by those qualified to testify to the proper method of performing such an operation; and if the untoward results present here might have been avoided by due care, the duty of showing that was also on the plaintiff.

I am not unmindful of the fact that in some cases the lack of skill or want of care is so obvious that expert testimony is unnecessary. . . . This, however, is not such a case, and the counsel for the respondent in his brief fails to point out anything which the defendant did or omitted to do that indicated absence of skill or lack of care. He merely refers to results and claims from these that a want of care may be inferred. But these, as previously stated, are not of such a character as to warrant that inference without the aid of medical testimony.

In conclusion the court reversed the judgment rendered below in favor of the plaintiff and dismissed the complaint with costs, holding the evidence of record to be insufficient to cast any liability upon the defendant.

#### DISSATISFACTION OF PATIENT WITH DENTAL SERVICE

Sometimes in the ordinary course of his practice the dentist will come across a patient who will claim to be dissatisfied with the dental services rendered to such an extent as to refuse to pay or perhaps even to permit the dentist to continue his efforts to make the work satisfactory, and the latter may have no choice save to lose the account or resort to law.

In *Holsapple vs. Scofield*, a Wisconsin decision, reported in 187 N. W. 682, the defendant, a lady of over seventy, employed the plaintiff, a practicing dentist, to extract six remaining teeth in her mandible and to make a

set of artificial teeth for both the mandible and the maxilla. The plaintiff extracted the teeth and, after taking the necessary impressions, had the two artificial dentures made.

The dentures were tried in the defendant's mouth, and after several readjustments the defendant expressed her dissatisfaction. Thereafter, after having worn or tried to wear the dentures in all about four days, the defendant returned the dentures, declined to try them further and refused to pay a balance due upon the account. The plaintiff thereupon brought the instant suit to enforce payment.

The action was commenced in a justice court, and the plaintiff recovered a judgment. The defendant appealed to the circuit court, where the case was tried before a jury and resulted in a judgment in favor of the defendant. The plaintiff thereupon carried the case to the Supreme Court of Wisconsin. Here, in reviewing the evidence of the respective parties, it was, in part, said:

Plaintiff, in addition to his own testimony, called three dentists as experts, and the substance of their testimony was that after extraction of so many teeth there would be a shrinkage of the substance that surrounded the roots of the teeth, and that such process takes considerable time and is slower in those of advanced years; that until there is such final settlement there can be no immediate complete or perfect adjustment of any artificial set of teeth, and that changes are required from time to time until there is a final settlement of the process, and often new plates are then required; that it requires considerable time for a person to adjust himself to such a lower plate. . . . The dentists testified that the materials and workmanship were good, and the articulation—that is, the manner in which the teeth came together in the mouth—was properly arranged, and that the price charged by plaintiff was reasonable. They also testified that, although in this particular set the upper teeth projected over the lower set, such was normal, usual and proper.

The defendant called no one who had any special or expert knowledge as to the nature

of such work. The evidence offered on defendant's behalf was to the effect that the teeth did not fit properly in the mouth, and that the upper jaw projected too far beyond the lower plate and caused her great inconvenience, pain and soreness.

After the foregoing review of the material parts of the evidence of the respective parties the court, in stating the general rule relative to a recovery by the plaintiff, used the following language:

If the plaintiff performed the dental services for the defendant and did the same in a good workmanlike manner in accordance with the recognized and established practice of those in the same profession in his locality, he became entitled to the reasonable value of his services.

The court next directed its attention to an examination of the evidence relative to whether or not it entitled the plaintiff to recover in accordance with the rule announced above. In weighing the evidence upon which to base its conclusion it was, among other things, said:

We must hold in this case that the issue here presented was one upon which expert rather than lay evidence was necessary. . . . The testimony of those familiar with that kind of work and services was all one way and to the effect that it was in accordance with the recognized standard of skill in that locality.

It is uncontradicted that a satisfactory result could not in the nature of things be expected during the short time in which defendant attempted to try the teeth furnished by the plaintiff, and she herself testifies that she refused to continue any further. . . . Neither court nor jury can use their own individual views or those of persons unfamiliar with such particular subjects as proper basis for their findings as against the uncontradicted and unimpeached testimony of those who are qualified to know and speak on such a subject. . . .

It follows that the court should have set aside the verdict and have granted plaintiff's motion for the amount asked in the complaint. Judgment reversed and cause remanded, with directions to render judgment for plaintiff.

The foregoing Wisconsin decision is one of great clearness and value to the

dental profession. In the light of the facts and holding, it is clear that mere dissatisfaction of a patient with dental services will not of itself be sufficient to enable such a patient to defeat recovery by the dentist.

#### CONCLUSION

And now, to summarize, I have not here attempted to bring all the cases in which dentistry was involved or even all of the legal questions pertaining to dentistry. There still remain numerous questions on which the courts have taken a stand, but I have attempted to bring up a widely divergent set of ques-

tions with type cases to show how the courts have generally decided.

#### BIBLIOGRAPHY

- Dental Jurisprudence*, N. G. Bennett, 1914.  
*Dental Jurisprudence*, E. D. Brothers, 1928.  
*Dental Jurisprudence*, W. E. Mikell, 1912.  
*Ethics and Jurisprudence for Dentists*, Edmund Noyes, 1923.  
*Law for the Dentist*, Leslie Childs, 1923.  
*Treatise on Dental Jurisprudence*, W. F. Reh fuss, 1912.



## Dentistry Today

By ARTHUR G. SMITH, D.M.D., Peoria, Ill.

### IV

It is true that people today want good teeth as they never wanted them in years gone by. It is also true that there are many men in the Dental Profession capable of supplying High-Grade Dental Restorations which will adequately salvage, for practically a lifetime of service, all except a small percentage of cases of Dental Disability. However, there must be included in any adequate analysis of this whole problem the definite Mass Psychological Reaction described last month before the matter of constructive remedial suggestion can be taken up.

Summed up as briefly as possible, and in a somewhat different form, the statement referred to runs as follows:

"Old Age and Toothlessness have for so long been used as synonymous and interchangeable terms that their influence on the subconscious minds of all of us runs very deep, acting as a bar to clear and accurate thinking when any matter touching the saving of the teeth is being considered."

It will require many years of the very best Educational Efforts of the very Best Men in Dentistry to start and maintain a back-fire of Scientific Information and Explanation, combined with a follow-up production of Dental Restorations of the highest quality, to check the devastating influences of this Age-Old Idea regarding the teeth. Furthermore, it must be con-

fessed that, in view of the average of Past Experiences on the part of the Public, with the average Dentist and his actual output, it is at present a difficult task to make out much of a case for the Dentistry of Yesterday as a permanent saver of teeth.

What does a frank cross-section of the Adult Dental Picture in this Country show at the present time?

At the very top is a very small percentage of super-fortunate individuals who either are entirely immune to caries or have had so slight an incidence of its attacks (and these of so simple a nature) that any rough-and-tumble filling—no matter how crudely made—has sufficed to save the teeth for a lifetime of service. Just below these comes a rather larger group who, in spite of the fact of a usual amount of caries during the years of adolescence, have been fortunate in falling into the hands of some Dentist of skill and vision who has adequately battled against his arch Enemy of Tooth Decay, wherever it showed its beginnings, and has saved each tooth attacked, by a single properly conceived and well executed restoration of the surfaces involved. These two fortunate groups, however, constitute only a small part of the whole picture, for the vast majority of adults have "Case Histories" which are tragically at vari-

ance with those just cited, reading something like this:

Amalgam fillings in practically all cavities in the "back" teeth (these may be from a few to forty or more in number). No definite program of "Extension for Prevention" has been undertaken by any operator, and as a result of this omission some of these fillings are sadly in need of replacement. Where approximal surfaces have been restored, there has been no proper contact point whatever recreated, the gingival margins are rough and the gum conditions tender and unhealthy. The entire mouth is all too often in a state of almost total disability, so far as handling a normal food bolus is concerned. The Patient is often much discouraged, for conversation with others has elicited a description of experiences quite similar to his own. Therefore the whole matter of the teeth has come to be definitely listed as one of the inevitable and undesirable features of the life of Civilized Man, and the final event of Toothlessness is awaited with an indifference out of all proportion to its actual tragedy.

Patients with this background of experience and in this frame of mind are a distinct challenge to the best and most graphic powers of Persuasion and Education which any man can bring into play. The line of approach and the style of appeal and illustration to be used must be chosen with the utmost care and must be based on an instant appraisal of the Patient's age, mentality and social position. No set rule can be given, for the arguments and verbal illustrations suitable for one

may be worse than useless if applied to the next. However, it may be "stated without fear of successful contradiction" that there is no more exhilarating and stimulating Indoor Sport than that of meeting and overcoming the attitudes of Pessimism, Discouragement and Indifference which many new Patients present on their first visit.

Expressions such as:

"Don't talk to me about saving my teeth!"

"I've been *trying* to save them ever since I can remember and *now* look at them!"

"I'm sick and tired of Dentists and Dental work! I want some teeth that I can at least pull out myself when they hurt me and give my jaws a rest!"

"I've paid three Good dentists to put in three amalgam fillings in that same cavity, and now you want to charge me more for one Gold Inlay than they charged me for all three fillings!"

"My Grandmother Jenkins had all her teeth out before she was twenty-five, lived on a farm, did all her own work and had ten children. She lived to be eighty-seven and yet you tell me that false teeth interfere with your digestion!"

"This high-priced tooth-plumbing is the Bunk. I have a friend who spent Fifteen Hundred Berries with a Big-Shot Dentist that works for all the Movie Stars, and the whole works blew up inside o' two years! Whadda ya know about that?"

"After all, they're My Teeth, aren't they? Well, can't I have 'em out if I want 'em out? If you won't do what

I want done, I guess I can find some one that will!"

Such are some of the bright gems of intelligent comment and encouragement which the Honest and Conscientious Practitioner of the Art of Dentis-

try is bound to meet as part of the Day's Work.

A few appropriate answers to these and similar observations will be the next order of business in this Series.

534 Jefferson Building



[DUTIES OF THE SPECIALIST]

Now let us consider the specialist. The practitioner whose practice is limited to a special branch is consulted, as a rule, only for a specific ailment. In the performance of his services the specialist bears the responsibility of satisfying both the patient and the referring practitioner not only in the quality of service rendered but also in the manner in which the case is handled. What are the duties of the specialist in a particular case? If the patient comes for consultation only, this should be the extent of the services. Suppose the patient is sent with instructions to have a specific operation performed. The practitioner, in accepting the case, must first satisfy himself that the indications for the services requested are in accordance with his own findings. For illustration, a patient is sent to an exodontist with instructions to have the left mandibular first molar removed. On examination the exodontist finds that in his opinion the second molar is the probable cause of the ailment of which the patient complains. There is no alternative here other than to communicate with the practitioner if possible and reach a definite decision before proceeding further with the case.

—BEAR.



## How Morton Davis Nearly Lost His Home

By A. L. WALTERS, D.D.S., Tulsa, Okla.

When Morton Davis led pretty Edith Doane away from the altar as his wife, he considered himself the luckiest and happiest man in all the great State of Texas.

Morton had good reason for happiness. Upon leaving high school he had entered a hustling bank in a rapidly growing city and by a happy combination of personal qualities had won his way steadily to the position of assistant cashier. He had not been too busy to notice the efficient secretary to the president of the bank and gradually they had come to take a larger part in each other's plans. For many months lately they had been sitting, during most of the evenings, with heads very close together, selecting the suburb where values would increase fastest and altering the plans of the bungalow their joint savings would permit them to build. Now he was assistant cashier, the bungalow was finished and Edith was his wife.

Every morning thereafter, never later than eight and sometimes before, Morton issued briskly from his door, threw his wife a final kiss as he turned the corner and entered on the stride which he never relaxed until he gave his wife the evening kiss at the end of the day. He worked happily and well and moved steadily forward in the business world.

All went well at home. The house was efficiently managed and Edith was quite as industrious and happy as

Morton. At the end of a year a fine baby made the pair into a trio, and they were happier than ever.

When the baby was about two years old, a change began to come over Edith. She had never before known more than normal fatigue, which ordinary rest or a brief change of scene quickly removed, and her absorbing interest in her husband and child kept her largely unaware of her efforts in their behalf. But now she found herself tiring in a way unknown to her before. Imperceptibly she lessened her efforts in some directions; then she began to stay at home more in the evenings and to retire earlier. The increased rest did not remove her fatigue, and she was frequently compelled to lie down during the day.

Morton did not sense the change for her best with him and partly because a long time, partly because she was at she did not seem to be ill. But, when her appetite began to fail and she lost weight, he pressed her into a confession, took her immediately to a physician in whom they had confidence, and got her mother down on a visit until things improved.

The physician made a careful and extensive diagnosis, but, except for fatigue without exertion and loss of appetite and of weight, he found nothing he considered seriously wrong. Her heart and lungs and liver were in excellent condition, and the kidneys were all right except that the urine

was somewhat too acid. She was constipated, so he prescribed a laxative and a tonic and predicted a speedy recovery. She did improve for a time, and all at home were happy.

After a few months, however, she relapsed into her former condition, except when larger doses of the laxative were taken. Her appetite fell away until she hated to eat, she lost weight steadily and, what was worse, she began to lose interest in the things that were dearest to her. She began to be indifferent to Morton's welfare, to the things he was interested in and even to the relations that endeared them to each other. She did not seem to realize that change, but when she found herself losing interest in the baby, who had been as the light of her eyes, she awakened with a shock, went to the physician, laid all the facts before him and pleaded that he do whatever he could to bring her back to normal. He made another painstaking examination, found no infection and no definite pathology and was big enough to tell her that he was at his wit's end.

About this time she became conscious of discomfort with her teeth, several of which were loose, and there was a continuous bad taste in her mouth. She was now too indifferent to almost everything to take any steps in her own behalf, but her mother forced action and she presented for treatment.

Visual, tactile and radiographic examinations of the mouth, supported by a few blood counts and a careful personal history, made up a diagnostic picture so definite and instructive that it must command the attention of the

medical and dental professions and, indeed, of the public at large.

The superficial signs, in addition to those charted in the physician's report, which was readily obtained, were loose teeth, unhealthy gum conditions with a liberal exudation of pus about many of the teeth upon digital pressure, considerable resorption of the supporting bony tissues, a peculiar, pasty look to the skin, which one can learn to recognize, and a dull yellow in the whites of the eyes.

Only one conclusion was possible, and that seemed self-evident. It was a case of chronic constipation with insufficient elimination. The tooth or gum or alveolar trouble was not the primary or essential thing. These were merely evidences of systemic conditions. And, however much help they might need locally, there wasn't a single chance of curing them by purely local treatment. The piling up of uneliminated waste products had killed the appetite, palsied the mind and poisoned the tissues. Nothing could be done until elimination was again something like normal.

The treatment seemed self-evident and was very simple. The patient was promptly placed on a course of colonic irrigations and mineral oil, given daily for several weeks, and all food was withheld except citrus fruit juices. These supplied in readily available form all the food her body then needed, and they promoted elimination. After a while she wanted something to eat. She was permitted no refined flours or cereals, no refined sugar or sweets made with it, and very little meat. She was given cereals and bread made of whole grain flours, milk, but-

ter, cheese, etc., vegetables raw in the form of salads and cooked, and several good oranges daily, the white skin to be finely chewed and eaten with the pulp. A glass of water was taken for each orange.

The teeth were carefully scaled and polished and the gums massaged. This was done three times the first week, twice the second week, and weekly for six weeks thereafter. She was taught the procedure for good home care and was faithful in it. Under the stimulus of good elimination and good local care the pus formation rapidly decreased and in twelve weeks digital pressure on the gums produced no pus. The loose teeth became very firm, the gum color improved and the teeth took on new luster.

The oral improvement was matched in the bodily improvement. The appetite returned, she gained weight and strength, the pasty look disappeared from the skin, the whites of the eyes again took on the clear blue-white of health, she goes happily about her work and her husband and baby again fill her world, which is rose-tinted whenever she looks at them.

From here on the text turns to the lesson.

The dentist is peculiarly well fitted to assist in making a diagnosis in such a case or to complete it when data come from the physician or, in simple cases, to make it himself, but there may be important factors that he cannot know about, such as intestinal adhesions, peculiarities or systemic infections, so that he can never be sure that his diagnosis is complete.

His favorable situation arises from the fact that the mouth is a readily

visible and fairly accurate barometer of the health of the digestive tract. And most of the diseases from which adults are dying prematurely in increasing numbers begin in the intestinal tract, usually with constipation. We are learning what Howe has tried to teach us—that debility of the intestinal tract is followed by debility of the soft tissues of the mouth. Stillman and McCall have repeatedly told us that if the underlying cause is neglected, all our scaling and polishing and massaging will produce only limited and temporary results.

This was clearly a case of a deficiency disease. The very thorough examinations by the physician and his laboratory ruled out systemic infections, intestinal deformities, and the like. A deficiency disease is one resulting from an insufficiency of one or more of the essential elements in the food. Probably none of the essential elements are ever entirely lacking; the consequences are sufficiently serious when they are not all present in optimum amounts.

Because this patient had not habitually eaten foods which contained the necessary elements and her system craved them, she ate liberally of foods in which they were not present. She thought all her food should be digestible, so she ate cooked fruits, refined cereals, white bread, meat and potatoes, eggs, fish, many "sweets," and tea and coffee. All of these were so completely digestible that there was insufficient bulk to maintain intestinal action, and constipation ensued. The excess of protein was retained in the colon, putrefied and liberated very powerful and dangerous poisons. The liver and kidneys were overworked and

could not eliminate all the poisons, so that some of them got into the tissues. Waste products were not broken down for ready elimination by the lungs and the skin. In a word, she was being poisoned to death by the consequences of an unbalanced ration.

She needed at least  $1\frac{1}{2}$  pounds of cellulose daily, and this was supplied by the white skin of the oranges, the bran of the whole grain preparations, and the fibers of the vegetables. She needed mineral salts, and her balanced ration was rich in them. The fruits and vegetables supplied the vitamins to stimulate the calcium take-up, as well as the organic acids to prevent excessive fermentation and assist in elimination. She needed a good deal of sugar, but it was desirable that she should make this herself from the liberal quantity of orange juice. She needed but little protein in the form of meat or fish. She needed much milk, but not much tea or coffee, and

she did not need any candy or ice-cream or soda-water.

She had her own tastes as to what she liked and disliked. She had not been able to drink milk because it caused constipation not from any fault in the milk or in her but because she did not have enough bulky food with it. She has now come to like the new ration. Morton complains a little because all the white biscuit he was so fond of have disappeared from the table, because he no longer gets a three-story cake with thick layers of chocolate, and when he sees little Morton, Jr., making hard work of the mastication of an air-dried crust of whole wheat bread, but she only laughs at him and says, "I lost interest in you once from eating the things you want and neither of you is going to lose any interest in me from any such cause as that."

604 Medical Dental Arts Building



## New York Tuberculosis and Health Association

### REPORT OF THE COMMITTEE ON STANDARDS AND SERVICES TO THE COMMITTEE ON COMMUNITY DENTAL SERVICE

#### RESOLUTION

*Whereas*, Child-caring agencies have no definite policy concerning care of children's teeth; and

*Whereas*, Many thousands of children throughout the United States are under the care of such agencies; and

*Whereas*, An opportunity is presented for promoting better health through preventive dentistry, particularly among the youngest children where the greatest good can be accomplished; be it

*Resolved*, That the Committee on Community Dental Service urge all organizations caring for children in either institutions or foster homes to adopt a minimum standard of dental care such as the one outlined in the *Standard Procedure for Treatment of Dental Clinic Patients*\* worked out by the Associated Out-Patient Clinics Committee of the New York Tuberculosis and Health Association and also to adopt the following policy:

#### POLICY

##### *Dental Care for Children in Institutions and Foster Homes*

Dental care should be provided for all children between the ages of 2 and 14, especially the youngest children (pre-school group), because of the

- (1) Benefit to health.
- (2) Preservation of teeth in position in order to maintain ability to chew effectively and painlessly.
- (3) Preservation of the dental arch.
- (4) Minimum expense.

The normal growth of the jaws is disturbed by premature loss of the deciduous (first or baby) teeth, thereby tending to cause crowding of the permanent teeth and deformity of the adjacent bones of the nose and head.

Not only from the standpoint of health but also from the standpoint of economy, the filling of tiny pits, fissures and cavities saves the deciduous teeth, thereby allowing the jaw to develop normally and possibly obviate the later expense of orthodontia and nasal operations.

The filling of the tiny breaks in the enamel of the first permanent teeth (especially first permanent molars) to erupt is also of advantage economically because of the time and cost necessary to take care of the extensive caries in the child of school age.

The necessary dental care may be obtained by service

- (1) Provided by the organization in the institutional building or administrative headquarters.
- (2) In private offices of dentists, the fee being paid by the institution.
- (3) In public clinics.

\* See THE DENTAL DIGEST, October, 1930.

# DIGESTS

## ANESTHESIA FOR THE DENTAL ANESTHETIST

By DR. F. P. DE CAUX

The author claims that, when properly administered, nitrous oxid is the safest anesthetic regardless of the age and condition of the patient. It is ideal for operations on the mouth and pharynx and should be administered undiluted until the patient is anesthetized. However, asphyxial symptoms should be relieved immediately by the addition of oxygen.

For extensive surgical work on the mouth nitrous oxid and oxygen is best administered by a tube passed through the nose into the trachea. Premedication should be used whenever possible, especially in the case of children.—*The Dental Record*, June, 1931.

not be left to improperly trained men. Furthermore, dentists are performing surgical operations for which they are not competent.

Those against the proposal claim that such a procedure would result in a scarcity of dentists and consequently many small localities would be left without dental care. Also, the general medical education is such that medical students would not have sufficient training in dentistry, and the medical faculties already have more students than they can train properly. Physician-dentists are very apt to employ technicians who practice dentistry secretly and illegally.

No decision was reached and the debate was ended for the present time—*The Journal of The American Medical Association*, June 13, 1931.

## PROPOSED CHANGES IN DENTAL STUDIES

For some time there has been a discussion at the Academy of Medicine in Paris as to whether or not the special dental diploma shall be abolished and the practice of dentistry confined to physicians and treated as a specialty of medicine.

Those in favor declare that dentistry has assumed so great an importance in general medicine that its practice can-

## INFRA-RED RAYS IN DENTAL SURGERY

By L. BIDDLE DUFFIELD, D.D.S.

These rays, because of their long wave-length, are one of the best methods of combating cellulitis. They facilitate the resolution of fibrous tissue and are of marked benefit in the softening and absorption of inflammatory processes. They are beneficial in neuralgias of peripheral origin and



are effective in certain acute and sub-acute inflammations. When an abscess is in the process of formation, they stop its development and in later stages they bring about suppuration and rupture.

They cause considerable hyperemia and vasodilation, which extend to the deeper tissues, thereby facilitating the removal of waste and increasing the number of leukocytes. The heat produced stimulates functional activities, reduces congestion and inflammation, relieves pain and induces rest and sleep.—*The Dental Cosmos*, July, 1931.

## THE IMPACTED TOOTH

By T. A. HARDGROVE, D.D.S.

This author claims that impactions occur as the result of endocrin imbalance, inefficiency and intermittent

action. The thymus and the thyroid are the important glands.

The impacted tooth develops without control or direction and, as a rule, lacks the force generally supplied to other teeth for their proper eruption. When given early, endocrin therapy, diet and hormone stimulation may prevent impactions.

Impactions are apt to be the result of inheritance, and it is a mistake to allow the root to develop when the tooth will surely be impacted, since it is much easier to remove the crown alone.

All the teeth should be in position when the thymus disappears and for that reason the cuspid and the third molar are the teeth most likely to be impacted, since they are the last to take their proper places.—*The Journal of The American Dental Association*, July, 1931.

## Foreign Dental Literature

Edited by JOHN JACOB POSNER, LL.B., D.D.S., New York, N. Y.

### EAR TROUBLE OF DENTAL ORIGIN

By DRs. LEBEDINSKY and YON,  
Paris, France

Many articles have been written concerning the relation between teeth and eyes. Few, however, have discussed the influence of diseased teeth upon the ears. It is not infrequent that baffling ear troubles have been found to have their origin in the teeth. Hip-

pocrates established the fact that toothache was a known cause of earache.

The discussion of ear trouble may be divided into two parts. The first concerns itself with the localization and anatomical relation between the dental system and the auditory apparatus. This part is relatively simple to explain. The second part is more complex and covers the physiology and pathology of the different manifestations.

Several cases are presented by the author which are of interest.

A woman, aged 40, suffered violent pains in and about the left ear. She consulted an ear doctor. He examined her carefully and found her hearing intact and no discoverable cause for her great pain. Nevertheless her trouble continued and the radiating areas of suffering extended to the base of the skull and the mastoid region. It was determined to trephine the mastoid area, and an appointment was given the patient to enter a sanitarium. It was then, upon the advice of another physician, that she went to see a dentist. A third molar was sought as a possible cause of the trouble. All thirty-two teeth were in place in the arches. It was seen, however, that a brownish patch of color was present on the gum alongside the left maxillary third molar. Upon pressing with a probe it was found to be soft and it burst. Immediately there were experienced all the sharp pains that centered about the ear. In a few days the gum tissue was normal. The operation for mastoid was abandoned and it is to be further noted that, the pain having completely subsided, the patient decided against the removal of the third molar.

In another case reported the patient, a man of 40, complained of pain in the right mastoid region which radiated about the entire head. Inquiry revealed that this condition had existed for two years without a let-up. The patient was deeply depressed and had come to believe that his condition was incurable. One physician had offered a diagnosis of cerebral tumor. The mouth was generally in good condition. The

mandibular six-year molar was found to be rather grayish in color, and careful probing revealed a tiny opening on the occlusal. A broach entered here into a gangrenous pulp. The tooth was removed. A week later the patient returned merely to thank the doctors and to say that his pains had completely disappeared with the removal of the tooth, and that it was the first relief that he had experienced in years.

In another instance a patient came to the clinic complaining of severe pain in the right ear. The mouth was normal. It was noted that the third molar in the mandible was unerupted. An x-ray revealed a horizontally impacted third molar. Upon removal of this tooth all symptoms disappeared.

In the final case reported a woman complained of severe pains in the ear and the side of the tongue. The mouth was in miserable condition, with most of the teeth broken down. There was a large ulceration of the tongue corresponding with the sharp edge of a broken-down six-year molar. All diseased teeth were removed and in fifteen days all symptoms had gone.

It must be remembered that reflex action in the fifth nerve will cause pains in and about the ears, and with this in mind both the physician and the dentist can do much for the suffering patient.—*Review of Dental Surgery and Stomatology*, June, 1931.

### LARGE CYSTS OF THE MANDIBLE

By DR. GERARD MAUREL, Paris, France

There are three types of cyst, namely, periapical, dentigerous, and multilocular or adamantinoma.

The first two types are found equally in both jaws. The adamantinoma is associated with the mandible.

The periapical cyst is one which is always associated with a dead tooth or root. Cysts found in conjunction with living teeth have been reported but have not been seen by the author. The periapical cyst develops about the root of the tooth. The dentigerous cyst is found about the crown of the tooth, and the tooth apex may be outside the cystic area. A tooth may be found included within the multilocular cyst.

As a rule, periapical and dentigerous cysts vary in size from a pea to a walnut. They may endanger the integrity of the mandible, resulting in a pathological fracture.

The usual cyst about a dead tooth or root is ordinarily a painless affair and may exist unknown to the patient over a long period of years.

The cyst may be recognized in many instances without the radiograph. This is true when the cyst has destroyed the bone and thinned out the buccal plate. The pressure of the contained fluid bulges the buccal plate outwardly until it feels like a celluloid ball. The lingual plate is seldom involved. The lower border of the mandible is highly resistant and is rarely invaded by the cyst. If a diagnosis of cyst is in mind, a puncture of the distended wall of the cyst will release the cyst fluid. The x-ray is of course a definite means of diagnosis.

A case of dentigerous cyst, a cyst about an unerupted tooth, is reported wherein the entire mandible from side to side up to the six-year molars was hollowed out without the patient ex-

periencing a single symptom. These cysts are subject to infection, in which case they break down and the fluid is discharged through one or more fistulous openings. Dentigerous cysts are most frequently seen in young persons.

The adamantinomas or multilocular cysts may be cystic or may be solid in structure. The adamantinoma not merely is native to the mandible but is always associated with the angle of the jaw. It may extend horizontally along the body or run upward along the ramus. There is no swelling of the lymphatics, which is an important point in ruling out a secondary infection.

It is often difficult to say whether a tumor is really an adamantinoma or one of the malignant types such as an epithelioma or sarcoma. In epithelioma there is always a severe submaxillary adenitis. The sarcoma is a little more difficult to recognize, as in the absence of secondary infection there is no submaxillary swelling.

The x-ray is one of the deciding factors in learning the exact truth. A biopsy may be resorted to, and from a slide of a section under the microscope the exact nature of the growth may be determined.—*L'Odontologie*, No. 5, 1931.

## THE RECOVERY OF TEETH AND ROOTS FROM THE ANTRUM

By G. S. BJALIK, Kiev, U. S. S. R.

There is an increasing interest in diseases of the antrum of Highmore. Many causes produce this condition, and one of them of decided interest

to dentists is the infection of the antrum through diseased teeth. An operation upon the antrum by the surgeon has frequently led to a recurrence of the original complaint, due to the failure at the time of intervention to remove one or more diseased teeth whose roots were in communication with the antrum.

The treatment of the antrum is well within the field of the dental surgeon. Hove found that 25% of all acute antrum conditions were of dental origin. Mahn found, in a series of eighteen cases, that nine were due to dental infection or complication. At the author's clinic 50 patients during the first two years were operated upon because of antrum trouble.

Horace observed 100 cases of antrum infection, and he divides the causes into three groups as follows:

(1) The roots of the teeth enter the antrum, although the teeth are in normal position in the arch.

(2) The tooth roots are in the neighborhood of the antrum and have reached the antrum membrane.

(3) The roots, due to an unfortunate extraction, have been forced into the antrum.

The last group is of course of purely dental origin. The reason that the root is pushed into the antrum is not always one of lack of skill on the part of the surgeon. It is frequently due to the anatomical structure of the maxilla, the antrum and its relationship to surrounding structures. It may be due to apical pathological structures. It must also be kept in mind that the apical portion of the alveolar process is also the floor of the antrum. The antrum on one side of the jaw may

be of different size and position from that on the other. In many instances a bony partition may be present, dividing the antrum into several chambers. The apices of the second bicuspid and two molars are normally in direct relation to the antrum.

The thickness of the bone between the roots of the maxillary posterior teeth and the antrum may be 4 mm. or, in some instances, just the thickness of paper. Sometimes the bone is entirely absent and merely the mucous membrane divides the roots from the antrum. In such instances the beaks of the forceps pressing and then slipping on the root will force the root directly into the antrum, as it is the path of least resistance.

Sometimes the granuloma at the root tip eats away the bone and thereby hollows out a path through which the root may pass into the antrum. During the operation, if the root disappears, one must first make certain that the root has actually entered the antrum, since it may have slipped between the hard and the soft tissues. Then again it may have disappeared into a small, unnoticed cyst cavity. The radiograph is of value in determining the location of the root.

It is dangerous to allow a root-end to remain in the antrum without steps being taken for its removal. Failure to retrieve the bit of root may cause empyema of the antrum and set up an infection which may result in death.

The sooner the root is removed, the better for the patient, as it will become infected and infect the entire lining of the antrum if allowed to remain where it is. The author gives the history of three cases in which roots have been

forced into the antrum. The palatal roots are frequently the ones to blame.

The author does not favor enlarging the socket of the tooth in order to retrieve the root from the antrum. In all these cases his preference is for the Caldwell-Luc operation, whereby entrance is made through the canine fossa and the antrum opened sufficiently to gain a clear view and access. The root may then be easily located and removed. The dressings are removed through the nose.

#### CONCLUSIONS

(1) It is important to have a radiograph of those teeth which suggest infection when the extraction is to be made in the region of the antrum.

(2) Where periapical infection is

present in deeply rooted teeth, the teeth should be removed surgically.

(3) The one correct method of removing a tooth from the antrum is through the canine fossa.

(4) The sooner the operation is attempted, the better the chances for a rapid and uneventful recovery.

(5) In operations which are undertaken immediately following the entrance of the root into the antrum no packing of gauze should be used, but the wound is to be completely closed with sutures.

(6) When an acute infection of an antrum is caused by the introduction of a root, the operation should be of the Caldwell-Luc type. The anesthesia may be local or general.—*Zeitschrift der Stomatologie*, May, 1931.



# PRACTICAL HINTS

THIS DEPARTMENT IS NOW BEING CONDUCTED FROM THE OFFICE OF THE DENTAL DIGEST. TO AVOID UNNECESSARY DELAYS, HINTS, QUESTIONS AND ANSWERS SHOULD BE ADDRESSED TO EDITOR PRACTICAL HINTS, THE DENTAL DIGEST, 220 WEST 42D STREET, NEW YORK, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

*Editor, Practical Hints:*

Can you help me with the following case:

The patient, female, aged 68, had her upper teeth extracted by a specialist about three months ago. She complains of soreness in the right bicuspid and first molar areas. The bone does not seem sore to pressure, and the soft tissues do not look inflamed.

The patient feels sure that the soreness is confined to the soft tissues. Muscular tension increases the pain. She says that the condition is more acute on some days than others.

Can you suggest the cause and treatment in this case?

H. R. S.

ANSWER.—The symptoms you describe would seem to indicate an injury to a nerve. If this is the case, it may be some time before normal conditions return.

You do not state whether or not there has been a perfect healing of the sockets. We would advise the taking of x-rays for examination for bone

injuries, spicules, etc. There may be a residual area of infection.

*Editor, Practical Hints:*

Kindly advise a method for removing a six-piece fixed bridge, the abutments being Richmond crowns with platinum posts. I succeeded in dislodging one Richmond, but the other is firm. I put a hole through the lingual of the firm Richmond parallel to the post and almost directly on a straight line with the post, using files and chloroform and the patient's saliva to bathe it, without any success.

N. R.

ANSWER.—It might be possible to exert leverage between the backing and the root by means of the hole you have already drilled. Great care should be used. Failing in this, it would probably be best to cut off the post, remove the bridge and drill out the post. A new post could be attached if the bridge is to be used again.



*Editor, Practical Hints:*

What causes a burning sensation over the area of an upper denture, especially on the roof of the mouth? The patient describes the sensation as similar to that of a plaster impression.

W. G. L.

ANSWER.—Burning sensation has been attributed to pressure on the palatine nerves, idiosyncrasy to vulcanite and the roughness of the vulcanite. In many cases it is impossible to find the cause. Metal dentures sometimes overcome the trouble, but it is unwise to promise favorable results by their use.

*Editor, Practical Hints:*

Please send me the formula of ammoniacal silver nitrate. Will you signify the strength of the ammonia?

A. A. L.

ANSWER.—We presume that you have reference to Howe's solution.

Solution No. 1 consists of a saturated solution of silver nitrate in water to which is added, little by little, strong ammonia, full strength. As the ammonia is added, a dark precipitate of silver oxid is thrown down. Ammonia is added until the solution becomes clear.

Solution No. 2 consists of a 25% solution of formalin in water, but in deep-seated cavities it is advisable to use eugenol in place of the formalin, since the former is less irritating.

*Editor, Practical Hints:*

I have a patient, female, eight years of age, who claims that since her

permanent teeth began to erupt she has been troubled with a dark stain encircling the gingival margin of all the teeth, both uppers and lowers. Her mouth hygiene is very good, and she has no carious teeth in her mouth.

Two months ago I removed this stain, and recently she presented with the condition as it was when she first visited me.

She has had whooping cough and measles recently.

Personally I feel as if she has a fairly well-balanced diet, and I am at a loss to advise her as to the condition coming from the food she eats.

J. S.

ANSWER.—The stain you mention is probably not due so much to diet as to a fungous growth, which is more or less common among children, and which as a rule disappears when they grow older.

This stain should be removed as often as necessary, since if it is allowed to remain the enamel will become etched.

*Editor, Practical Hints:*

What is the best method or agent for bleaching a non-vital, discolored tooth? I have in the past read of it, but I have forgotten what was to be used and how applied.

E. F. N.

ANSWER.—The tooth to be treated is isolated by the rubber dam, great care being taken to see that it is tight. The apical third of the root must also be sealed. The tooth is opened and a saturated solution of sodium dioxid

applied on asbestos fiber. When the dentin has been thoroughly saturated, 10% sulphuric acid is applied, which neutralizes the alkali and forces out the contents of the dentinal tubuli. The tooth is then thoroughly washed with hot distilled water.

The application of the sodium dioxid may be repeated, omitting the treatment with the acid but washing with hot water. Metal instruments should not be used in applying the bleaching agent.

---

REPLY TO J. S. B.—In the June issue J. S. B. inquires as to the reason for the clicking jaws which occurred after the removal of the tonsils.

The probable reason is that the jaws were opened too wide during the tonsillectomy, causing an injury to the joint.

To correct this condition, the procedure is to make a half-inch incision at the joint and curet it with an instrument like a straight elevator. Then the jaw is bandaged for one week.

I have seen five cases like this during the past few months. One suture is made in the incision, and it can be done with local or general anesthetic.

GEO. E. COX, D.D.S.

---

REPLY TO M. M.—I have just read M. M.'s experience under PRACTICAL HINTS in the July DENTAL DIGEST in regard to getting anesthesia of the second division by making a mandibular injection.

I have had this happen a number of times, and I am sure that the

explanation is that the mandibular injection was made rather high and probably more solution was used than necessary, thereby causing the solution to infiltrate upward and anesthetize the second division of the fifth nerve.

The first experience of this kind gives the operator a peculiar feeling, but I am sure that there is absolutely no harm done.

H. H. GODBERSON, D.D.S.

---

REPLY TO R. P. N.—In reference to R. P. N.'s first case in the July issue of THE DENTAL DIGEST—a double mandibular block was given to extract both lower first molars. A blanching of the face was noted.

The cause of the whitening of the face was due to the solution being injected directly into an artery or vein. If you will pardon the personal reference, I have extracted teeth for nearly 35,000 patients in a charity clinic in the past five years and I have had this "phenomenon" happen about ten or twelve times. In a mandibular injection, when this phenomenon happens, the entire side of the face blanches *instantly*.

Now, then, for the proof that this is really what happens. In a palatine injection, even when not in close proximity to the foramen, the entire half of the palate whitens *instantly* and the solution flows from the syringe as if it were being injected into a vacuum. When the needle is withdrawn, profuse bleeding occurs.

This is a very rare occurrence, and my average is high because of the tremendous number of patients.

Probably the last ten times I have gone into an artery (or vein), I have withdrawn the needle and changed the position. The only two indications you have to go by are: (1) the structure involved whitens instantly, and (2) the solution leaves the syringe as if it were being injected into air.

Another "phenomenon" you get when doing a mandibular block is partly blocking the facial nerve and getting a temporary paralysis of the

face and eyelid. This is due, of course, to improper technic.

I have also gone into blood-vessels while using the tuberosity injection. Injecting into blood-vessels of the palate is probably the most common occurrence.

One other symptom I almost forgot—the patient has a slight dizzy feeling, if very much of the solution goes into the blood stream.

M. R. COFFMAN, D.D.S.



#### [A BAD PROCEDURE]

*Many patients today are selecting their dental specialists without consulting a dentist in general practice, and physicians also frequently refer cases directly to the specialists. Exodontists, periodontists and radiodontists are acting as consultants. This practice has the decided objection that, in their points of view, they must, of necessity, be motivated by a highly specialized mind and influenced by an experience based upon a particular kind of practice. It has never been customary for the surgeon to be the diagnostician except in his own field. The internist or general practitioner in medicine as a rule makes the diagnosis after using all the tests, signs and symptoms, and then the case is referred, or at least there is a consultation before a decision is reached. On the other hand, it is common practice for a radiodontist to diagnose from a roentgenogram and then to report his findings to a physician without even a casual examination of the mouth and its tissues.*

—RAUH.

## DENTAL SECRETARIES and ASSISTANTS

### Secretaries' Questionnaire

All communications should be addressed to Elsie Grey, care of  
THE DENTAL DIGEST, 220 West 42d Street, New York, N. Y.

---

NOTE—HAVE YOU A BETTER WAY? HAVE YOU A TIME-SAVING SHORT-CUT? DO YOU KNOW A "STUNT" THAT LIGHTENS THE WORK OR MAKES FOR GREATER EFFICIENCY IN THE OFFICE? IF SO, WRITE TO ELSIE GREY. YOU MAY HELP MANY GIRLS WHO ARE BEGINNERS—AND YOU KNOW HOW YOU NEEDED HELP DURING YOUR FIRST FEW MONTHS IN A DENTAL OFFICE. PERHAPS YOU NEED HELP NOW. WRITE TO ELSIE GREY—SHE WILL HELP YOU.

---

*Dear Miss Grey:*

A tube of vanishing cream placed handy to the wash basin is a great help in keeping the hands in good condition. I include it in the office supplies. Both the doctor and I find it indispensable.

A. L. H., N. Y.

Many thanks for the suggestion. We appreciate your interest in our column.

ANSWER. — Dissolve some baking soda in hot water and use with a medium stiff brush—a teaspoon of soda to a pint of water. Or you can use alcohol on a cotton swab.

We are glad that our column has been of aid to you. We believe that dental assisting offers fine possibilities for educated, capable women, and that dental assistants have a splendid vocation worthy of the best effort.

---

*Dear Miss Grey:*

Can you suggest something that will help to remove polishing rouge from pieces of gold work such as crowns, bridges, plates, etc.? I have to scrub and scrub to get it off.

Your column is the most helpful thing I know of in my work. Not only do I get practical ideas from it, but there is always some bit of inspiration tucked in to encourage us in our work.

M. K., Penn.

---

*Dear Miss Grey:*

I am rather new at the work of dental assistant, having had this position just a few weeks. Another assistant in our building advised me to write to you about this problem of mine.

The doctor takes a lot of impressions with modeling compound, and I help him to run the models, unveil them, etc. Sometimes the compound sticks to the model so hard that I cannot get it off. Little pieces just won't come away unless I scratch them off, and the doc-

tor says this spoils the model. What do you think is the matter, and what must I do?

L. P., Ga.

ANSWER.—Do you coat the compound impressions with a thin film of sandarac? If not, try doing this. Then, when you place the cast in hot water to soften the compound for unveiling, do not have the water too hot nor allow it to remain too long in the hot water. Both these mistakes will cause the compound to stick fast in spots.

Should there be bits of compound on the plaster cast that seem not to want to come off, do not scratch them off. The doctor is right. This does spoil the model. Simply take a piece of the warm compound, after immersing the plaster cast in the warm water, and touch it to the bits of compound on the model. These will adhere and you will have a clean cast.

Dear Miss Grey:

What do you think a dental secretary should know? I do not mean the young woman who helps in the operating room, x-ray room and laboratory, but the one who is the business manager, stenographer, receptionist, etc. I should like to have your ideas on the subject.

C. N. R., Ohio.

ANSWER.—As a dental secretary I take it for granted that you are striving to be "the best dental secretary" in your city; in other words, that you have grounded yourself in the fundamentals of your profession in order

that you may achieve the success that every ambitious, intelligent individual strives for in whatever calling he may be. Granting this, what, then, are some of the qualifications that a competent dental secretary should possess?

(1) She should have a good fund of general information about dentistry, past and present, and of all its allied interests. This is especially true of the young woman who is employed by a dentist who is active in dental affairs, locally, nationally or internationally. The best way to acquire this information is to read the dental journals that come into the office, the dental society bulletins, dental history, etc.

(2) Not only should she have a thorough knowledge of the type of dental work that her employer does (this is especially true of a young woman employed by a specialist, so that she will be familiar with the particular terms used in his dictation), but she should know also all dental terms. In addition to this she should understand and use "good English." Spelling, too, is most essential. A dental secretary should be able to write correctly and graciously as well. A good secretary should train herself to compose letters for a busy employer, so that he will have to give her only the gist of his thought, briefly and without dictation, for the routine letters.

(3) A study of general business methods is an asset. Keep your ears and eyes open; train your memory to retain names of people, places and things. Be accurate, especially in figures, and this applies as well to addresses and telephone numbers. Give careful attention to details. Take

pains with your work, and do not do it mechanically. Use your imagination. Imagination plays a big part in successful application to one's work, whether in a dental office or elsewhere.

(4) A dental secretary should know some practical psychology. This will help her as a receptionist, on the telephone and with her employer and her other associates in the office.

I have touched only the high spots. Besides all these, a dental secretary should possess a charm of manner, patience, ambition, willingness and tact. Not only do all of these result in professional advancement, but they will build intelligence and character and will always be an asset to any woman, wherever she may be.

Dear Miss Grey:

Not long ago you spoke about the appearance of the dental assistant and

how necessary it was for her to be properly dressed whether in the office or out of it. I ran across the following the other day and thought that you and your readers might enjoy it, too, as I did. At least I hope it will raise a smile.

Business Betty rides down town  
Neat and sweet from sole to crown  
In a smartly simple gown,  
With hat to match in softest brown.

Tawdry Tess across the aisle  
Wears a dress of discarded style,  
Slippers that would not last a mile,  
A white lace hat and a satisfied smile.  
Who'll be promoted?  
Give a guess.  
Business Betty or Tawdry Tess.

How do you dress for work, dental assistants?

Miss B. L.

Thanks, Miss B. L., we did get a smile out of the poem and a serious thought also, as there is much truth in it as well as poetry.

## Educational and Efficiency Society for Dental Assistants, First District, New York, Inc.

Beginning with the regular October meeting, the Educational and Efficiency Society for Dental Assistants, First District, New York, Inc., will resume its educational programs. These activities will include study groups in bacteriology, chair assisting, sterilization, laboratory and x-ray assistance, practical psychology, office management and kindred subjects vital to the work

of the dental assistant. The Clinic Club also will resume its meetings on the third Monday evening of each month.

The Society meets regularly on the second Tuesday evening of each month, October to May, inclusive. A cordial invitation to attend is extended to members of the dental profession and to dental assistants.



## BOOKS RECEIVED

A BOOK MAY BE AS GREAT A THING AS A BATTLE—DISRAELI

*Fractures of the Jaws*, by Robert H. Ivy, M.D., D.D.S., F.A.C.S., Professor of Maxillo-Facial Surgery, Graduate School of Medicine, and of Clinical Maxillo-Facial Surgery, School of Dentistry, University of Pennsylvania; Chief of Maxillo-Facial Surgery, Graduate Hospital; Consultant in Plastic Surgery, Children's Hospital, Philadelphia; Colonel, Medical Officers Reserve Corps, U. S. Army, and Lawrence Curtis, A.B., M.D., D.D.S., Assistant Professor of Maxillo-Facial Surgery, Graduate School of Medicine and School of Dentistry, University of Pennsylvania.

This monograph is a very practical treatise on the subject. The authors have had a wide experience and set forth in detail the methods that have been used by them successfully. They deplore the lack of interest by the general surgeon and the careless manner in which fractures are frequently han-

dled, resulting in a permanent disability of the jaw. By the technic outlined in this book fractures may be reduced almost immediately with great benefit to the patient.

After a short chapter on the anatomy of the head the fractures of the mandible are taken up. The lower jaw is more frequently broken than any other facial bone and consequently more space is given to its treatment. The illustrations are numerous and clear, and many case histories are given. Complications that sometime arise are given due consideration.

Fractures of the other facial bones are taken up in a similar manner, making a book that will be invaluable to any one who comes in contact with cases of this sort.

It is interesting to note that in 100 consecutive cases 49 were caused by the bare fist, while only eight were brought about by automobile accidents.

178 pp., with 177 illustrations and index. Philadelphia, Pa.: Lea & Febiger, 1931.—A. M. J.



# FUTURE EVENTS

THE EASTERN DENTAL SOCIETY OF THE CITY OF NEW YORK will hold its first meeting of the season at the Allied Dental Council Auditorium, 425 Lafayette St., New York, on October 1, 1931.

The essayist of the evening will be Karl W. Knapp, and his subject will be *Modern Fixed Bridgework on Vital Abutment Teeth*.

A discussion on *Fixed Bridgework* will be given by James Kendall Burgess.

Victor Stoll will lead the Round Table Discussion.

Promptly at 7:30 P. M. a series of clinics covering the subject of *Bridgework* in detail will be given by the following clinicians:

Kenneth G. Campbell  
Lawrence Joseph Dunn  
Hyman Friedman  
Charles Goodman  
Herbert H. Kabnick  
Roy Dufford Ribble  
Joseph N. Sablow

Mayer B. A. Schier  
Jacob Schleimer  
Jonas Silverstone  
David Slutskin  
J. J. Stark  
George Straussberg  
S. Waterman

LOUIS LERNER, *President*,  
HERMAN SPITZ, *Chairman*,  
*Executive Board*.

THE MONTREAL DENTAL CLUB will hold its Seventh Annual Fall Clinic in the Windsor Hotel, Montreal, October 15-17, 1931.

Clinicians: R. W. Tench, New York, on *Full Dentures*; E. O. West, Des Moines, Iowa, on *Gold Inlays and Bridgework*. Names of other clinicians will soon be announced.

Ample space has been allotted exhibitors. Information concerning this may be obtained from Dr. K. C. Berwick, 1410 Guy Street, Montreal, Canada.

An invitation is extended to all ethical dentists. For information as to fees, etc., address

ERWIN C. BURBANK, *Chairman of Publicity*,  
1008 Medical Arts Bldg., Montreal, Canada.

THE AMERICAN FULL DENTURE SOCIETY will hold its Third Annual Meeting at the Claridge Hotel, Memphis, Tenn., October 16-17, 1931. An interesting program of papers and clinics has been arranged.

The President's banquet will be held Friday evening, October 16th.

H. L. HARRIS, *Secretary-Treasurer*,  
607 Medical Arts Bldg., Minneapolis, Minn.

THE AMERICAN SOCIETY OF ORAL SURGEONS AND EXODONTISTS will hold its Thirteenth Annual Meeting at The Elks' Hotel, Memphis, Tenn., October 16-17, 1931.

HOWARD C. MILLER, *Secretary*,  
55 East Washington St., Chicago.

## ALPHA OMEGA FRATERNITY

A meeting of the Supreme Council has been called, by order of the Supreme Chancellor, on Monday, October 19, 1931, at 2 P. M. at the Hotel Chisca, Memphis, Tenn., the fraternity headquarters during the American Dental Association convention. All fraters are requested to attend this meeting.

The chairman of local arrangements is M. H. Davis, Hotel Peabody, Memphis, Tenn.

HENRY BROWN, *Supreme Chancellor*,  
A. M. FLASCHNER, *Supreme Scribe*,  
419 Boylston St., Boston, Mass.

THE AMERICAN DENTAL ASSISTANTS ASSOCIATION will hold its Seventh Annual Meeting at Memphis, Tenn., October 19-22, 1931.

RUTH S. ROGERS, *President*,  
Suite 803, 223 West Jackson Blvd.  
Chicago, Ill.

THE AMERICAN DENTAL HYGIENISTS' ASSOCIATION will hold its Eighth Annual Session in Memphis, Tenn., October 19-23, 1931.

AGNES G. MORRIS, *Secretary*,  
886 Main St., Bridgeport, Conn.

THE SOCIETY FOR THE ADVANCEMENT OF GENERAL ANESTHESIA IN DENTISTRY will hold its next meeting at Saltzman's, 60 East 42nd Street, Lincoln Building, New York, on Monday evening, October 26, 1931.

The meeting will open with a dinner at seven o'clock, and the scientific session will commence at eight o'clock.

The essayist of the evening will be Frank W. Rounds, D.D.S., of Boston, Mass., who will present a talk entitled *Practical Suggestions in Anesthesia for the General Dentist*. Dr. Rounds is President of the American Society of Exodontists and Oral Surgeons and has earned a well merited reputation in his specialty.

The officers of the Society who have been elected for 1931-1932 are as follows: James T. Gwathmey, M.D., New York, Honorary President; M. Hillel Feldman, D.D.S., New York, President; Irwin Abel, D.D.S., New York, Vice-President; Leonard Morvay, D.D.S., Newark, N. J., Secretary-Treasurer.

Membership is open to all ethical practitioners subscribing to the code of ethics of the American Dental Association.

THE INDIANA STATE BOARD OF DENTAL EXAMINERS will meet in the House of Representatives Room of the State House, Indianapolis, Indiana, on November 16, 1931, at 8:00 A. M., for the purpose of conducting an examination of all applicants for licensure in Indiana who come with proper credentials and are accepted for examination.

All applications should be in the hands of the Secretary one week before the meeting. The examination will probably last four days. For applications, clinical requirements and other information, address

J. M. HALE, *Secretary-Treasurer*,  
Mt. Vernon, Ind.

#### GREATER NEW YORK DECEMBER MEETING

The Seventh Greater New York December Meeting will be held at the Hotel Pennsylvania, New York, N. Y., November 30-December 4, 1931. The meeting this year has been dedicated to Children's Dentistry.

The initial session will be a joint meeting of the medical societies of the five Boroughs of Greater New York, together with the First and Second District Dental Societies, at which papers on important subjects of interest to both professions will be presented and discussed from both the medical and the dental viewpoints.

The Chicago Dental Society has accepted an invitation to furnish essayists and clinicians for

the balance of the meeting. Among the essayists will be the following prominent Chicago dentists: R. C. Willett, Harold J. Noyes, E. C. Pendleton, R. O. Schlosser, R. C. Gillis, W. I. McNeil, H. W. Kubacki, Stanley D. Tylman, Robert E. MacBoyle, Leo S. Seidner, William E. Harper, Corvin F. Stine, G. R. Lundquist, E. D. Coolidge, Charles W. Freeman, P. G. Puterbaugh, Joseph E. Schaefer, Fred Molt, Rudolf Kroonfeld, Ed Ryan, H. E. Phillips, H. C. Miller, Harold S. Smith, W. H. G. Logan, Howard Miller, J. R. Blayney, Lon W. Morey, George H. Wandell, E. H. Hutton, F. B. Noyes, A. D. Black.

An exhibit by dental manufacturers will continue at the hotel throughout the meeting.

JOHN T. HANKS, *Chairman*,  
CARROLL B. WHITCOMB, *Vice-Chairman*.

THE OHIO STATE DENTAL SOCIETY will hold its Sixty-Sixth Annual Meeting at the Netherland Plaza Hotel, Cincinnati, Ohio, December 1-3, 1931.

The Southern Society of Orthodontists will hold its meeting jointly with the Ohio State meeting.

Men who have accepted invitations to appear on the program include Martin Dewey, Arthur H. Merritt, Charles F. Bodecker, New York; I. Wingate Todd, Edward Reiter, Cleveland; F. Blaine Rhobotham, Chicago; Carl W. Hoffer, Nashville; E. E. Bailey, Denver; Nathan Sinai, Ann Arbor.

A cordial invitation is extended to all members of the American Dental Association.

E. C. MILLS, *Secretary*,  
255 East Broad St., Columbus.  
E. J. ROCHE, *Publicity Chairman*,  
453 Doctors Bldg., Cincinnati.

THE NEW YORK DENTAL ECONOMIC SOCIETY has arranged the following program for the ensuing year:

- (1) *The Building of Good Will*—P. Wesley Coombs, Sr., Associate Professor of Marketing, New York University.
- (2) *Psychology in Business and Profession*—N. L. Hoopingarner, Associate Professor of Business Psychology, New York University.
- (3) *Personality Inventory*—To be made by the Psychological Corporation of New York.
- (4) *The Present Status of the Principles and Practice of Good Dentistry*—Alfred W. Walker, Assistant Professor Pulp-Canal Therapy, New York University.
- (5) *Law for the Dentist*—M. G. Jenkins, Attorney for the United States Fidelity and Guaranty Company.

- (6) *Expression, Impressiveness, Poise*—Walker Matteson, Department of Business English, New York University.
- (7) *The Present Status of Medico-Dental Research and Education*—Speaker to be announced.
- (8) *The Efficient Administration of Dental Practice*—Speaker to be announced.

The purpose of the New York Dental Economic Society is to promote the best interests of its members. They have as a common ideal the sincere and active interest in self-development and improvement as these factors relate to public welfare.

Membership in the Society is now open to all ethical dentists in New York. Application for membership is subject to the approval of the membership committee and to a two-thirds majority vote of the Society.

JACOB REINER, *President*,  
MORRIS TURKEL, *Secretary*,  
708 Lexington Avenue, New York, N. Y.  
HERMAN ALOFSIN, *Chairman Program Committee*.

#### THE CHICAGO DENTAL SOCIETY MIDWINTER MEETING

The 1932 Midwinter Meeting of the Chicago Dental Society is to be held at the Stevens Hotel, Chicago, January 18-21, 1932.

The Program Committee already has in the process of development what promises to be one of the finest programs ever presented before any Midwinter Meeting of this Society.

All members of the American Dental Association and members of recognized foreign dental organizations are cordially invited to attend.

CHARLES R. BAKER, *President*,  
636 Church St., Evanston, Ill.  
HOWARD C. MILLER, *Secretary*,  
55 East Washington St., Chicago, Ill.

THE KINGS COUNTY DENTAL SOCIETY will celebrate its Twentieth Anniversary at Hotel St. George, Brooklyn, N. Y., February 25-27, 1932.

The scheduled activities include clinics, lectures, table and topic discussions. For the first two days authorities in their respective specialties of dentistry will give these lectures. As a grand finale, a supper dance will be held on Saturday night, February 27th, in the new Grand Ball Room of Hotel St. George. The usual program of special talent for entertainment will be enlarged upon to celebrate the event.

A cordial invitation is extended to every ethical dentist to participate with us in this combination of postgraduate instruction and social enjoyment.

MATTHEW D. LEVIN, *Chairman Publicity Committee*,  
201 Eastern Parkway, Brooklyn, N. Y.

THE DENTAL SOCIETY OF THE STATE OF NEW YORK will hold its Sixty-Fourth Annual Meeting at Hotel Ten Eyck, Albany, N. Y., May 11-13, 1932. A cordial invitation is extended to all members of state societies, Canadian societies and ethical dentists.

The officers and committees will present a program which we trust will enlist the attention of all dental practitioners.

H. J. Burkhart, 800 East Main Street, Rochester, N. Y., is Chairman of the Program Committee; E. W. Briggs, 1118 Madison Avenue, Albany, N. Y., Chairman of the Exhibits Committee; and Dr. E. Hurley, 80 Fourth Street, Troy, N. Y., Chairman of the Clinics Committee.

For further information, address

A. P. BURKHART, *Secretary*,  
57 East Genesee St., Auburn, N. Y.



